



City of Belmont

2017 Climate Action Plan

RICAPS
Regionally Integrated Climate Action Planning Suite



Acknowledgements

Belmont City Council

Charles Stone, Mayor

Doug Kim, Vice-Mayor

Davina Hurt, Councilmember

Warren Lieberman, Councilmember

Eric Reed, Councilmember

Belmont City Manager

Greg Scoles

Belmont City Staff

Carlos de Melo

Damon DiDonato

Mark Nolfi

Thomas Fil

Nawel Voelker

Jennifer Rose

Dan DeSmidt

Terri Cook

Jonathan Gervais

Afshin Oskoui

Leticia Alvarez

Randy Ferrando

Diane Van Zant

Diane Lynn

Cora Dino

Scott Rennie

John Jones

Jason Eggers

Camille Dunning

This climate action plan was developed using the Regionally Integrated Climate Action Planning Suite (RICAPS) funded by a grant from the Bay Area Air Quality Management District (BAAQMD) and by California utility customers, administered by Pacific Gas and Electric Company (PG&E) under the auspices of the California Public Utilities Commission and with matching funds provided by the City and County Association of Governments of San Mateo County (C/CAG).

RICAPS Steering Committee: Elizabeth Claycomb (City of Pacifica), Erin Cooke (City of Cupertino), Brandi de Garreaux (City of Portola Valley), Shelly Reider (City of Millbrae), Jim Shannon (City of San Bruno)

RICAPS Project Consultant: DNV GL Energy Services USA Inc.

RICAPS Staff: Richard Napier (C/CAG), Sandy Wong (C/CAG), Kim Springer (County of San Mateo), Susan Wright (County of San Mateo), Andrea Pappajohn (County of San Mateo)



Table of Contents

1	Introduction	1
1.1	Why the City Belmont has a Climate Action Plan	2
1.2	Climate Science	2
1.3	Projected San Francisco Bay Area Climate Impacts	6
1.3.1	Rising Sea Levels.....	6
1.3.2	Extreme Heat & Storm Events.....	9
1.3.3	Public Health	10
1.3.4	Decreasing Fresh Water Supply.....	11
1.4	State Policy and Regulatory Context.....	12
1.5	Regional Efforts	15
1.6	Local efforts	17
1.7	City of Belmont's Climate Action Plan Process	20
1.7.1	Framework for Climate Action	20
1.7.2	Public Outreach and Community Engagement	22
2	Greenhouse Gas Inventory and Forecast.....	23
2.1	Inventory Sources and Data Collection Process	23
2.2	Baseline Emissions Inventory for 2005	25
2.2.1	Electricity and Natural Gas Emissions	26
2.2.2	Transportation Emissions	28
2.2.3	Solid Waste	29
2.2.4	Municipal Operations.....	30
2.2.5	Emissions Forecast for 2020 and 2035	31
2.3	Emission Reduction Targets	33
2.3.1	Reductions from State-Level Actions.....	33
2.3.2	The City of Belmont Reduction Target.....	34
3	Climate Action Strategies	36
3.1	Energy	37
3.1.1	Goal: Increase municipal, residential, and commercial energy efficiency, renewable energy, efficient water use, and green building.	39
3.2	Transportation and Land Use.....	41

3.2.1	Goal: Reduce emissions from transportation through efficient land use, alternate modes of transportation, and operational innovations.....	44
3.3	Solid Waste	45
3.3.1	Goal: Reduce solid waste generated and sent to landfills.....	46
3.4	Adaptation	47
4	Implementation	48
4.1	Prioritizing measures for action.....	48
4.2	Results of measure prioritization	51
4.3	Summary of Measures	52
4.4	Meeting the emission targets	55
4.5	Management of GHG Reduction Strategy.....	56
4.6	Public Participation and Community Engagement.....	56
4.7	Timeline	57
5	Monitoring and Improvement.....	58
6	Conclusion	59
	Appendix A. Glossary of Terms.....	60
	Appendix B. 10 Steps to Reduce Your Carbon Footprint.....	61
	Appendix C. Summary of Funding Sources.....	64
	Federal Funding.....	64
	State Funding.....	64
	Utility Rebate Programs	65
	Local Energy Programs.....	66
	Other Funding Opportunities	67
	Appendix D. Adaptation Planning for Climate Impacts	68
	Appendix E. Future Opportunities for Emissions Reductions.....	72
	Appendix F. Baseline GHG Inventory and Forecast	73

Letter from Mayor Stone

Right now is a critical time for our community, our economy, and our environment. We are fortunate here in Belmont to be surrounded by a wealth of knowledge and opportunity, fostered by our business innovation and emboldened by our resident's entrepreneurial spirit. Belmont has a strong history of supporting environmental preservation principles, as exemplified by previously creating a Green Advisory Committee and establishing sustainability as a legislative priority. This drive to protect natural resources is one of the core values of our community. However, resources fundamental to the vibrancy of Belmont are at risk from the effects of climate change, which in San Mateo County, including Belmont threatens to increase sea level, summer temperatures, the prevalence and strength of storms, and air pollution; aggravate health problems; and decrease the reliability of the water supply.



Climate change is a global problem and only through local solutions designed to meet the needs of our community can we mitigate and adapt to its impacts and protect the environment. Together, we can conserve our scarce resources, thereby saving our families and companies money, increasing the resilience of our economy and emergence of new markets that prioritize green technologies. This plan is a comprehensive and strategic approach to sustainability, offering a suite of recommended actions that will engage all members of Belmont's community in this journey to safeguard our environment. The Plan also includes ideas to allow our City government to "walk the talk" by implementing practices that minimize our own impacts on the environment by echoing the energy efficiency, water conservation, and alternative transportation programs and services our Climate Action Plan proposes to establish for our community.

This small but important step is just the beginning of an exciting time of environmental stewardship and community transformation in which the City of Belmont is taking the lead. But as you can see when reviewing this Plan, the proposed efforts of Belmont are small when compared to the collective action of our citizenry. Sustainability requires more than just environmental protection, it will take leadership and partnership to deploy these actions. We invite you to actively join Belmont's transition to a clean environment, healthy community, and prosperous future. The key to Belmont's success is you!

Charles Stone

Mayor of Belmont

1 Introduction



The City of Belmont is pleased to present the following Climate Action Plan (Plan). This Plan is designed to be a blueprint of our community's response to the challenges posed by climate change. Climate scientists around the world, represented by the Intergovernmental Panel on Climate Change, have an unequivocal position: human activity is changing the earth's climate through the release of greenhouse gas (GHG) emissions resulting from the combustion of fossil fuels. The longer communities delay taking action, the greater the risk humans face of irreversibly depleting nonrenewable resources and harming our environment. However, it is conceivable, and increasingly foreseeable, that humans will delay so long that useful policy and programs will become infeasible and both human civilization and the biosphere will be permanently damaged.

Our city cannot solve the climate crisis alone. Together with our partners in county, state, and federal government, Belmont has committed to taking steps to reduce our emissions and create new programs and services that will support our community and our families in doing the same. This Plan offers ways to make our homes more energy efficient and increase the amount of locally produced renewable energy. It recommends "smart" development patterns that emphasize vibrant complete neighborhoods that allow people to go about their business on foot, by bicycle, or via public transportation. It provides transit solutions and offers ways to reduce the waste heading to our landfills. Finally, this Plan outlines measures that will make our municipal government an efficient and resource-conservation minded organization.

1.1 Why the City Belmont has a Climate Action Plan

The City of Belmont, with our partner the City and County Association of Governments (C/CAG) of San Mateo County, with partial grant funding from the Bay Area Air Quality Management District (BAAQMD) and Pacific Gas and Electric Company (PG&E), has developed this Climate Action Plan in order to support cities in achieving a number of objectives, including:

- **To demonstrate environmental leadership** – We as a community can rise to the difficult challenge of reducing the impact of climate change by taking reasonable steps to reduce our GHG emissions.
- **To save money and promote green jobs** - Residents, businesses, and government will reduce their utility costs through increased energy and water efficiency. A focus on efficiency creates job opportunities within the community that contribute to protecting our environmental resources.
- **To comply with letter and spirit of state environmental initiatives** – California is taking the lead in tackling climate change while driving the new energy markets and fostering new environmental services. As such we have a responsibility to help the state meet its goals to reduce greenhouse gas emissions.
- **To promote sustainable development** – By developing this Climate Action Plan according to Bay Area Air Quality Management District guidelines, a new class of sustainable development projects, such as mixed use and transit oriented developments, can be fast-tracked through the California environmental review process.

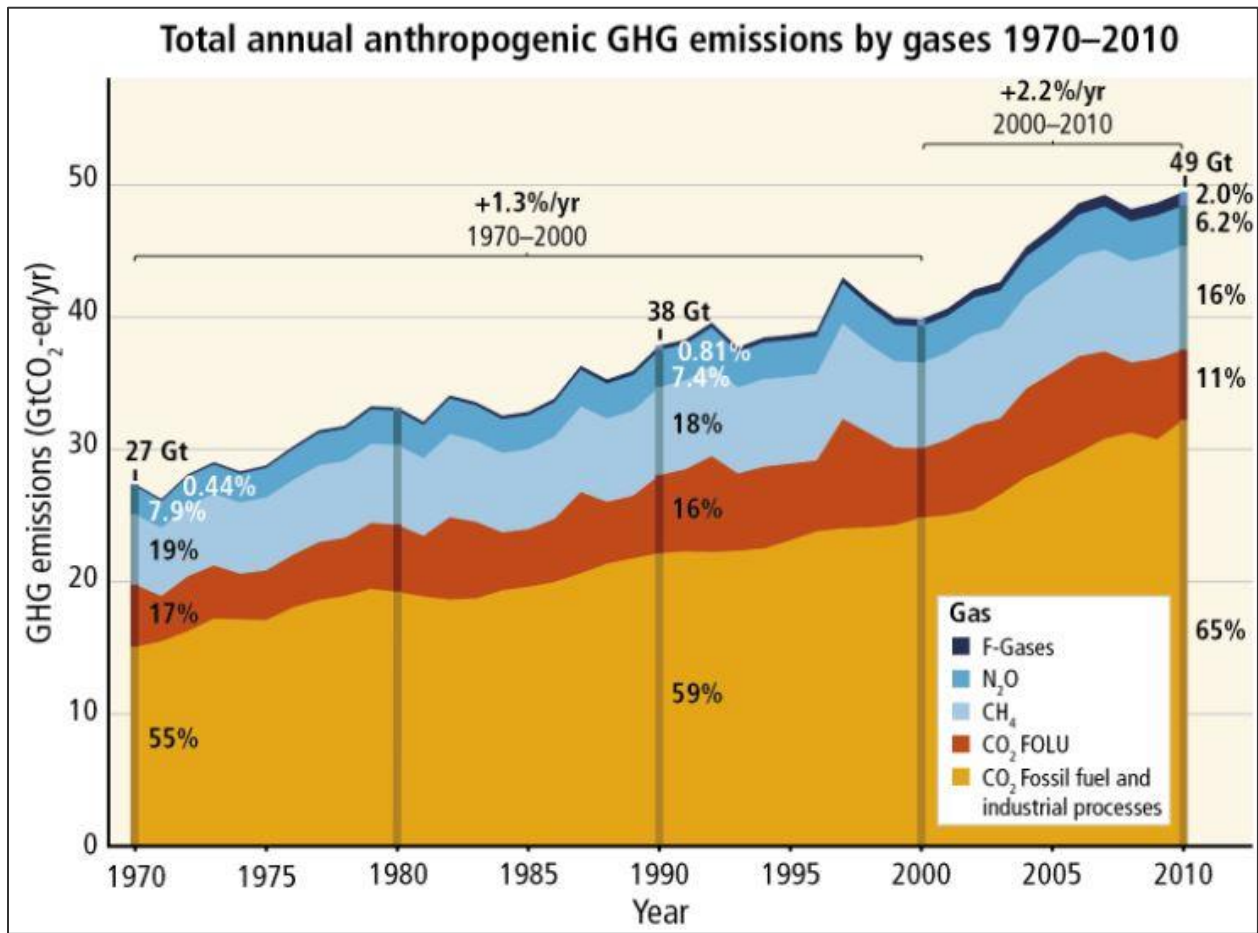
We have developed this Climate Action Plan in order to support Belmont in achieving a number of different objectives

1.2 Climate Science

Climate change presents one of the most profound challenges of our time. A broad international consensus exists among atmospheric scientists that the Earth's climate system is being destabilized in response to elevated levels of greenhouse gas emissions in the atmosphere. This is primarily from the combustion of fossil fuels for energy use. Greenhouse gas emissions include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and three man-made gasses: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Figure 1 from the Intergovernmental Panel on Climate Change (IPCC), the leading international scientific body on climate change, shows the growth and distribution of anthropogenic (human-caused) greenhouse gas emissions in the atmosphere.

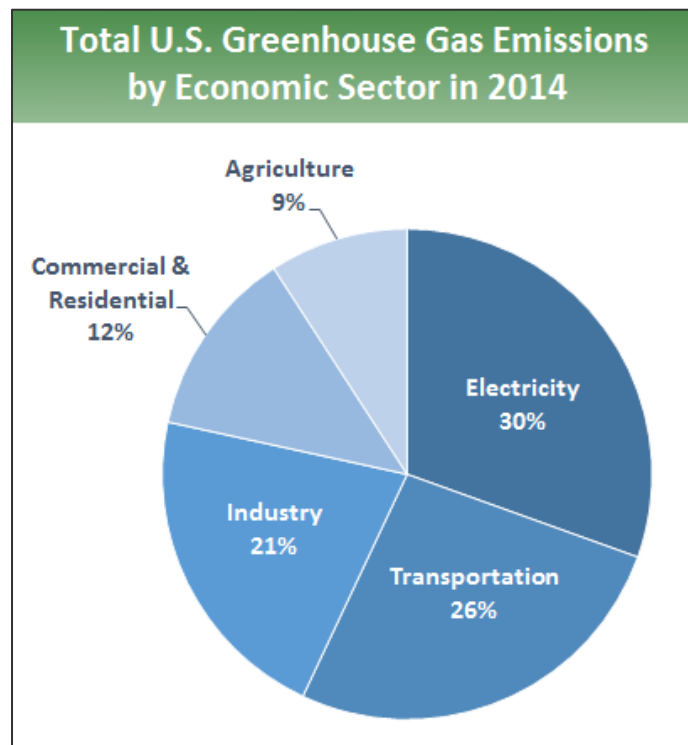
Figure 1: Growth and Distribution of Global Anthropogenic GHG emissions



Source: International Panel on Climate Change, Fifth Assessment Report

The largest anthropogenic contributor to climate change is carbon dioxide emissions from carbon dioxide and industrial processes (65%), followed by methane (16%), carbon dioxide from forestry and other land use changes (11%), nitrous oxide (6.2%) and fluorinated gases (2.0%). Carbon dioxide is emitted through the combustion of fossil fuels such as coal and petroleum as well as through the decomposition of clear-cut forests (deforestation). Figure 2 summarizes emissions by economic sector in the United States.

Figure 2: Greenhouse Gas Emissions by Economic Sector in the United States



Source: Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks*

At a national level, the largest contributor to greenhouse gas emissions is the electricity sector (30%), followed by the transportation (26%), industry (21%) commercial & residential (12%) and agriculture (9%).

A 2009 comprehensive study of climate impacts on the United States, written by a task force of U.S. government science agencies, led by the National Oceanic and Atmospheric Administration (NOAA),¹ makes the following key conclusions:

- 1. Global warming is unequivocal and primarily human-induced.** Average global temperature has increased over the past 50 years. This observed increase is due primarily to human-induced emissions of heat-trapping gases.
- 2. Climate changes are underway in the United States and are projected to grow.** Climate-related changes have already been observed in the United States and within its coastal waters. These changes include increases in heavy downpours, rising temperatures and sea level, rapidly retreating glaciers, thawing permafrost, lengthened

¹U.S. Global Change Research Program 2009. "Global Climate Change Impacts in the United States." Page 12. <http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts>

growing seasons, lengthened ice-free seasons in the ocean and on lakes and rivers, earlier snowmelt, and alterations in river flows.

- 3. Widespread climate-related impacts are occurring now and are expected to increase.** Climate changes are already affecting water, energy, transportation, agriculture, ecosystems, and health. These impacts are different from region to region and will grow under projected climate changes.
- 4. Climate change will stress water resources.** Access to clean water is an issue in every region, but the nature of the potential impacts varies. Drought, related to reduced precipitation, increased evaporation, and increased water loss from plants, is an important issue, especially in the West. Floods and water quality problems are likely to be amplified by climate change in most regions. Declines in mountain snowpack are important in the West and Alaska, where snowpack provides vital natural water storage and supply.
- 5. Crop and livestock production will be increasingly challenged.** Agriculture is considered one of the sectors most adaptable to changes in climate. However, increased heat, pests, water stress, diseases, and weather extremes will pose adaptation challenges for crop and livestock production.
- 6. Coastal areas are at increasing risk from sea-level rise and storm surge.** Sea-level rise and storm surges place many U.S. coastal areas at increasing risk of erosion and flooding, especially along the Atlantic and Gulf Coasts, Pacific Islands, and parts of Alaska. Energy and transportation infrastructure and other property in coastal areas are very likely to be adversely affected.
- 7. Threats to human health will increase.** Health impacts resulting from climate change are related to heat stress, waterborne diseases, poor air quality, extreme weather events, and diseases transmitted by insects and rodents.
- 8. Climate change will interact with many social and environmental stresses.** Climate change will combine with pollution; population growth; overuse of resources; urbanization; and other social, economic, and environmental stresses to create larger impacts than from any of these factors alone.
- 9. Thresholds will be crossed, leading to large changes in climate and ecosystems.** There are a variety of thresholds in the climate system and ecosystems. These

“Climate changes are already affecting water, energy, transportation, agriculture, ecosystems, and health.”

thresholds determine, for example, the presence of sea ice and permafrost and the survival of species, from fish to insect pests. These all have implications for society.

- 10. Future climate change and its impacts depend on choices made today.** The amount and rate of future climate change depend primarily on current and future human-caused emissions of heat-trapping gases and airborne particles. Responses involve reducing emissions to limit future warming and adapting to the changes that are unavoidable.

According to the current scientific consensus, a 2°C increase in average global temperature over the next century is a “safe” level of global warming. To limit the average global temperature increase to 2°C, GHG concentrations need to be stabilized at a level well below 450 parts per million (ppm). In 2015, the global atmospheric concentration of CO₂ passed 400 ppm². Achieving this level requires global GHG emissions to be reduced by at least 50 percent below their 1990 levels by the year 2050.

1.3 Projected San Francisco Bay Area Climate Impacts

Climate change refers to all aspects of climate, including disruptions to weather patterns that include shrinking of glaciers, accelerated sea level rise, more intense heat waves, shifts in animal and plant ranges, and changes in the timing of plant reproduction. In California and western North America, a changing climate is evident. During the past 50 years, the region has experienced warmer winter and spring temperatures, reduced spring snow levels in mountains and earlier snowpack melt.

1.3.1 Rising Sea Levels

Historical records show that sea level in San Francisco Bay has risen about 7 inches (18 cm) over the past 100 years. Scientists agree that the rate of sea level rise is accelerating, but projections of future sea levels vary considerably. Present projections used by the State of California³ are for 14 inches of sea level rise by 2050 (using 2000 as the baseline) and for between 40 and 55 inches by 2100, depending upon the emission scenario used. In 2009, the Bay Conservation and Development Commission (BCDC) released *Living With a Rising Bay*, an assessment that included the following⁴:

² National Oceanic and Atmospheric Administration (NOAA), “Greenhouse gas benchmark reached”, <http://research.noaa.gov/News/NewsArchive/LatestNews/TabId/684/ArtMid/1768/ArticleID/11153/Greenhouse-gas-benchmark-reached.aspx>

³ Sea-Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), 2010. State of California Sea-Level Rise Interim Guidance Document. October 2010.

⁴ San Francisco Bay Conservation and Development Commission. 2009. (April) Draft Staff Report. Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline. Available at: http://www.bcdc.ca.gov/proposed_bay_plan/bp_1-08_cc_draft.pdf



- Increased flooding risk for 270,000 Bay Area residents with a 55 inch rise
- Estimated \$36 billion in at-risk property by 2050, and \$62 billion by 2100
- Estimated 95% of tidal wetlands vulnerable to sea level rise, which may increase flooding and erosion

As part of a 2009 study conducted by the Pacific Institute, with support from the California Energy Commission, California Department of Transportation, and the Ocean Protection Council, inundation maps for the shores of San Francisco Bay that indicate which areas are vulnerable to 16-inch and 55-inch rises in sea level were produced.^{5,6} The Bay shoreline, from Brisbane to East Palo Alto, is a typical San Francisco Bay low-lying shoreline which provides vital ecological, industrial, and residential functions yet is already vulnerable to inundation from both tidal and fluvial sources. Both the San Francisco Airport and the Port of Redwood City are at risk, as are segments of critical transportation infrastructure including segments of Highway 101, approaches to the Dumbarton and San Mateo Bridges, and Caltrain railroad. As shown in Figure 3, many low-income communities located in Redwood City, East Menlo Park and East Palo Alto are particularly susceptible to sea level rise, and may have fewer resources or alternatives available to bolster their resilience.

According to the same 2009 study, 110,000 people live in areas of San Mateo County that are vulnerable to a 100-year flood event with a 1.4 meter rise in sea level. The County infrastructure and facilities at risk from the same event include:

- \$24 billion worth of buildings and contents, mostly along the Bay (replacement value)
- 530 miles of roadways
- 10 miles of railroads
- San Francisco Airport (SFO), including the 31 MW United Cogen power plant in that location

⁵ Maps available at http://www.pacinst.org/reports/sea_level_rise/hazmaps.html

⁶ Heberger, Matthew, Heather Cooley, Pablo Herrera, Peter H. Gleick, and Eli Moore (2009). The Impacts of Sea Level Rise on the California Coast. PIER Research Report, CEC-500-2009-024-D, Sacramento, CA: California Energy Commission.

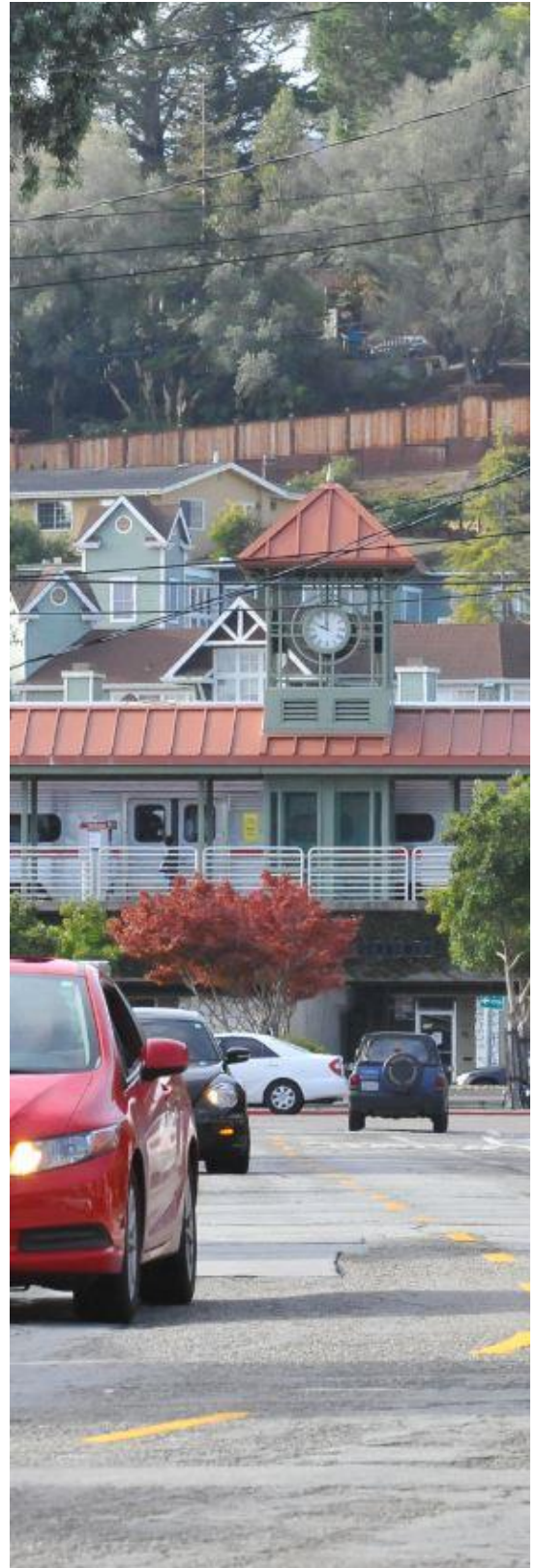
The range of current sea level rise estimates presents very different scenarios to cities that must decide how to expend limited resources to protect critical land uses and infrastructure. As the shoreline migrates landward, habitats and flood hazard areas will also shift. Past development of residential, commercial, and public access infrastructure may limit the flexibility of set-backs or adjustments to the Bay shoreline.

1.3.2 Extreme Heat & Storm Events

California in general should expect overall hotter and drier conditions with a reduction in winter rain (and concurrent snow in the mountains), as well as increased average temperatures. There is a high likelihood that extreme weather events, including heat waves, wildfires, droughts, and floods will be among the earliest climate impacts experienced.⁸ In San Mateo County, higher average sea levels means that storms will impact the Bay shore more severely with higher storm surges, more extensive inland flooding, and increased erosion. If more frequent or severe natural disasters occur, more emergency and public health services will be needed to deal with the consequences.

Heat related illness and mortality are expected to increase. Though extreme heat events in coastal areas like San Mateo County are not expected to be as severe or as long-lasting as further inland, the resident population is not as well prepared or equipped to deal with higher temperatures. Air conditioning is far less common, for example. Outdoor workers, elderly populations, and infants are particularly vulnerable to extreme temperatures.

Higher temperatures and drier summer conditions produce higher levels of ozone, which can exacerbate respiratory illnesses, particularly among vulnerable populations such as children and the elderly. Higher temperatures and drier conditions can also increase the potential for wildfires, which



⁸ California Natural Resources Agency, 2009, *California Climate Adaptation Strategy*, <http://www.climatechange.ca.gov/adaptation/>

could lead to declines in air quality and also cause negative impacts to respiratory and cardiovascular health.

Agriculture is also likely to be impacted by extreme weather events, higher temperatures, and less water availability for agricultural production, resulting in lower production and a potential decline in food security.



Additional Resources about Climate Change

- International Panel of Climate Change Fifth Assessment Report: <https://www.ipcc.ch/report/ar5/>
- U.S. Global Change Research Program: <http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts>
- Pew Center on Climate Change: <http://www.pewclimate.org/>
- National Ocean and Aeronautical Administration (NOAA) http://www.climate.gov/#Data_And_services
- U.S. Environmental Protection Agency Climate Change Indicators: <https://www.epa.gov/climate-indicators>
- Real Climate: <http://www.realclimate.org/>

1.3.3 Public Health

Most Californians are not aware of recent statistics that suggest that California is home to the worst air quality in the nation, with over 90% of Californians breathing unhealthy air. According to the California Air Resources Board, unhealthy levels of ozone (smog) and particulate matter annually contribute to:

- 19,000 premature deaths
- 9,400 hospital admissions for respiratory and cardiovascular disease
- 280,000 asthma and other lower respiratory symptoms
- 22,000 cases of acute bronchitis



- Millions of school and work days lost due to respiratory conditions⁹

In addition, climate change, including increased summer temperatures, can have adverse effects for the health of City of Belmont's residents and workers, especially the vulnerable populations such as children, seniors, and those with existing chronic illnesses, as mentioned in Section 1.3.1.

San Mateo County Health System, in accordance with the Centers for Disease Control, serves a number of functions to reduce health risks related to climate change. These include informing cities about the risk to public health from climate change, creating tools that support decision-making and capacity building related to mitigating adverse health outcomes from climate change, and serving as a credible leader in planning for the public health impacts of climate change.

The City of Belmont intends to work with the San Mateo County Health System to mitigate public health dangers and maintain or improve long-term health by encouraging local residents and workers to be part of the solution. Research shows that individuals who live in mixed-use and walkable communities have a 35 percent lower risk of obesity.¹⁰ Another study estimates that the walking associated with transit use saves individuals \$5,500 over the course of their life by reducing obesity-related medical costs.¹¹

City of Belmont and the Health System will support programs that promote more walkable and bikeable cities, which not only promote healthier lifestyles, but also decrease reliance on vehicles that contribute to climate change.

1.3.4 Decreasing Fresh Water Supply

With shifting climate patterns, significant uncertainty exists related to whether the drought conditions are the "new normal" for California. However, all climate projections show increases in average temperatures and reduced snowpack where Belmont sources much of its water. Rising temperatures compounded by decreased precipitation have already severely reduced spring snowpack in the Sierra Nevada. The Sierra Nevada snowpack is projected to be reduced by at least 25 percent by 2050¹² and will pose severe water supply challenges for

⁹ American Lung Association. Land Use, Climate Change & Public Health Issue Brief: Improving Public Health and combating climate change through sustainable land use and transportation planning. Spring 2010.

¹⁰ Frank, Lawrence D., et al. Obesity relationships with community design, physical activity, and time spent in cars. American Journal of Preventive Medicine, Volume 27, Issue 2, Pages 87-96, August 2004.

¹¹ Active Living Research; Robert Wood Johnson Foundation, 2009

¹² Scenarios of Climate Change in California: An Overview. Final report from California Energy Commission, Public Interest Energy Research (PIER) Program, California Climate Change Center, publication No. CEC-500-2005-186- SF, posted: February 27, 2006.

California, including the Hetch-Hetchy system on which Belmont relies. Additionally, California may see longer drought periods and decreased groundwater levels. Belmont must continue to reduce consumption of water and seek to capture more water locally through rainwater, graywater, and storm water retention, as well as investments in local green infrastructure.

1.4 State Policy and Regulatory Context

The State of California has been a leader in developing and implementing policies and regulations to directly address the risk of severe climate change. Below we summarize the key statewide legislation aimed to reduce GHG emissions. There are many supporting pieces of legislation and other related initiatives that are sector specific. These are more fully described in Chapter 3.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, the California legislature passed Assembly Bill (AB) 32, which set the goal of reducing GHG emissions back to 1990 levels by 2020. AB 32 finds and declares that “global warming poses a serious threat to economic well-being, public health, natural resources and the environment of California.” The legislation granted authority to the Air Resources Board to establish multiple mechanisms (regulatory, reporting, voluntary and market) to achieve quantifiable reductions in GHG emissions to meet the statewide goal.

Senate Bill 32, the California Global Warming Solutions Act of 2006 Emissions Limit

In September of 2016, the California legislature approved Senate Bill (SB) 32, which extends the state’s targets for reducing greenhouse gas from 2020 to 2030. Under SB 32, the state will reduce greenhouse gas emissions 40 percent below 1990 levels by 2030. The bill piggybacks on AB 32, the California Global Warming Solutions Act of 2006, which calls for California to reduce greenhouse gases to 1990 levels by 2020. Governor Jerry Brown set the targets contained in SB 32 in an executive order in 2015. SB 32 codifies the targets set by the executive order.

Assembly Bill 197, State Air Resources Board Greenhouse Gases Regulations

In September of 2016, the California legislature approved Assembly Bill 197, a bill linked to SB 32, which increases legislative oversight over the California Air Resources Board and directs the California Air Resources Board to prioritize disadvantaged communities in its climate-change regulations, and to evaluate the cost-effectiveness of measures it considers. AB 197 requires the ARB to “protect the state’s most impacted and disadvantaged communities ... [and] consider the social costs of the emissions of greenhouse gases” when developing climate

change programs. The bill also adds two new legislatively appointed non-voting members to the ARB, increasing the Legislature's role in the ARB's decisions.

Senate Bill 350, Clean Energy and Pollution Reduction Act of 2015

In October of 2015, Senate Bill (SB) 350 was signed into law, establishing new clean energy, clean air and greenhouse gas reduction goals for 2030 and beyond. SB 350 codifies Governor Jerry Brown's aggressive clean energy goals and establishes California's 2030 greenhouse gas reduction target of 40 percent below 1990 levels. To achieve this goal, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 (legislation originally enacted in 2002) to 50 percent by 2030. Renewable resources include wind, solar, geothermal, wave, and small hydroelectric power. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030.

California Energy Efficiency Strategic Plan of 2008

In September of 2008, the CPUC adopted California's first Long Term Energy Efficiency Strategic Plan, presenting a single roadmap to achieve maximum energy savings across all major groups and sectors in California. The Strategic Plan was subsequently updated in January 2011 to include a lighting chapter. The Strategic Plan sets goals of all new residential construction and all new commercial construction in California to be zero net energy (ZNE) by 2020 and 2030, respectively. Additionally, the Strategic Plan sets goals of 50% of existing commercial building to be retrofit to ZNE by 2030 and all new state buildings and major renovations to be ZNE by 2025.

Senate Bill 1275, Charge Ahead Initiative

In September of 2014, Senate Bill (SB) 1275 was signed into law, establishing a state goal of 1 million zero-emissions and near-zero-emission vehicles in service by 2020 and directing the Air Resources Board to develop a long-term funding plan to meet this goal. SB 1275 also established the Charge Ahead California Initiative requiring planning and reporting on vehicle incentive programs, and increasing access to and benefits from zero-emissions vehicles for disadvantaged, low-income, and moderate-income communities and consumers.

Assembly Bill 1493, the Pavley Bill

In 2002, the California legislature enacted Assembly Bill (AB) 1493 (aka "the Pavley Bill"), which directs the Air Resources Board to adopt standards that will achieve "the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles," taking into account environmental, social, technological, and economic factors. In September 2009, the Air Resources Board adopted amendments to the "Pavley" regulations to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The Pavley Bill is considered to be the national model for vehicle emissions standards. In January of 2012, the Air Resources Board

approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirement for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars.

Assembly Bill 117, Community Choice Aggregation

AB 117 establishes the creation of Community Choice Aggregation that fosters clean and renewable energy markets. Community Choice Aggregations (CCA) allow cities and counties to aggregate the buying power of individual jurisdictions. The California Community Choice Aggregation markets were created as an answer to the Brown Out and energy shortages of the early 2000's. AB 117 was passed in 2002 as an answer to California being more energy independent by using more alternative and renewable energy sources in an energy portfolio. With AB 117, municipalities can provide alternative energy choices to their local carrier (e.g. PG&E). Marin Clean Energy was the first CCA in the state of California in 2010 to go online with a 50% - 100% clean energy portfolio. Peninsula Clean Energy (PCE) was created in February 2016 when all 20 towns/cities in San Mateo County, plus the County of San Mateo, voted unanimously to form a Joint Powers Authority to administer the program. PCE is a public, locally-controlled electricity provider that gives PG&E customers in San Mateo County the choice of having 50% to 100% of their electricity supplied from clean, renewable sources at competitive rates. CCAs are governed by the California Public Utilities Commission (CPUC). SB 790 further ensures fair and transparent competition by creating a code of conduct and guiding principles for entrants into the CCA field.

Senate Bill 375, GHG Reduction

In September 2008, Senate Bill (SB) 375 was signed into law to provide emissions reduction goals related to vehicle-miles traveled on a regional planning level. The bill seeks to align regional transportation planning efforts with regional GHG reduction targets and land use and housing allocations. SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy or alternative planning strategy. The Air Resources Board, in consultation with the MPOs, has set a per capita GHG reduction target for emissions of passenger cars and light trucks in the San Francisco Bay Area of 7 percent below 2005 levels by 2020, and 15 percent below 2005 levels by 2035.

Senate Bill 97, CEQA Guidelines for Addressing GHG Emissions

The California Environmental Quality Act (CEQA) requires public agencies to review the environmental impacts of proposed projects, including General Plans, Specific Plans and specific kinds of development projects. In February 2010, the California Office of Administrative Law approved the recommended amendments to the State CEQA Guidelines for addressing

GHG emissions. The amendments were developed to provide guidance to public agencies regarding the analysis, mitigation, and effects of GHG emissions in draft CEQA documents.

Bay Area Air Quality Management District CEQA Guidelines

The Bay Area Air Quality Management District (BAAQMD) encourages local governments to adopt a GHG Reduction Strategy that is consistent with AB 32 goals. The GHG Reduction Strategy may streamline environmental review of community development projects. According to the BAAQMD, if a project is consistent with a GHG Reduction Strategy, then it can be presumed that the project will not have significant GHG impacts. This approach is consistent with the following State CEQA Guidelines, Section 15183.5.a:

“Lead agencies may analyze and mitigate the significant impacts of greenhouse gas emissions at a programmatic level, such as...a plan to reduce greenhouse gas emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an [Environmental Impact Report] containing a programmatic analysis of greenhouse gas emissions.”

This Plan provides a foundation for future development efforts in the community. It is expected that environmental documents for future development projects will identify and incorporate all applicable voluntary and mandatory measures from this Plan for projects undergoing CEQA review.

1.5 Regional Efforts

The following regional efforts promoting GHG reductions are already under way:

City/County Association of Governments of San Mateo County (C/CAG). C/CAG is a council of governments consisting of the County of San Mateo and its 20 cities. The organization deals with topics such as transportation, air quality, stormwater runoff, hazardous waste, solid waste and recycling, land use near airports, abandoned vehicle abatement, and issues that affect quality of life in general. C/CAG supports a number of sustainability initiatives including the following:

- **San Mateo County Energy Watch.** This program is a local government partnership between PG&E and C/CAG to promote energy efficiency in municipal and non-profit buildings. The program is managed and staffed by RecycleWorks, a program of the County of San Mateo.
- **Congestion Management Agency.** C/CAG serves as the Congestion Management Agency for San Mateo County to identify strategies to respond to future transportation

needs, develop procedures to alleviate and control congestion, and promote countywide solutions.

- **Sustainable Communities Strategy/Regional Transportation Plan.** C/CAG is collaborating with local governments in San Mateo County as well as regional agencies to develop a Sustainable Communities Strategy (SCS) in compliance with the requirements of SB 375. The SCS will facilitate more focused development in priority development areas near public transit stations. The aim of the San Mateo County SCS is to better integrate land use with public transportation in order to reduce GHG emissions.

Energy Upgrade California in San Mateo County. This San Mateo program aims to help residential consumers make improvements to their homes so they will use less energy, conserve water and other natural resources, and become healthier and more comfortable. The program connects homeowners with participating contractors who can help plan and complete energy efficiency projects and take advantage of rebates. Energy Upgrade California is a partnership among California counties, cities, non-profit organizations and the state's investor-owned utilities (e.g. PG&E). More information on this program can be found online at: <http://www.energyupgradeca.org/en/>

Peninsula Clean Energy (PCE). Peninsula Clean Energy (PCE) was created in February 2016 when all 20 towns/cities in San Mateo County, plus the County of San Mateo, voted unanimously to form a Joint Powers Authority to administer the program. PCE is a public, locally-controlled electricity provider that gives PG&E customers in San Mateo County the choice of having 50% to 100% of their electricity supplied from clean, renewable sources at competitive rates. CCAs are governed by the California Public Utilities Commission (CPUC). Belmont is a part of Peninsula Clean Energy – San Mateo's new official electricity provider – and has opted for the ECO100 option (100% renewable option) for all City-owned accounts.

Joint Venture: Silicon Valley Network. Established in 1993, Joint Venture: Silicon Valley Network provides analysis and action on issues affecting the local economy and quality of life. The organization brings together established and emerging leaders -- from business, government, academia, labor, and the broader community -- to spotlight issues and work toward innovative solutions. Joint Venture is dedicated to promoting climate-friendly activities that help the local economy and improve quality of life in Silicon Valley.

PG&E's Sustainable Communities Team. A PG&E Community Energy Manager has been assigned to San Mateo County to work jointly with each municipality to develop a comprehensive energy management strategy that the city can implement across institutional, residential, business, and industrial sectors. In addition, PG&E can provide city and county

energy usage data, GHG inventory assistance and information on innovative pilot grant funding for projects that help to reduce GHG emissions in each community.

Silicon Valley Leadership Group (SVLG) Bay Area Climate Compact. SVLG is an organization consisting of principal officers and senior managers of member companies to work cooperatively with local, regional, state and federal government officials to address major public policy issues affecting the economic health and quality of life in Silicon Valley. In 2009, SVLG organized the Bay Area Climate Compact, which establishes a framework for regional cooperation and setting aggressive goals for the reduction of greenhouse gas emissions.

Sustainable San Mateo County (SSMC). SSMC was established in 1992 by a group of San Mateo County citizens who sought to create a broader awareness of the sustainability concept. SSMC supports multiple programs to promote energy efficiency, alternative transportation and education on sustainability concepts which focus on the intersections of the environment, the economy and social equity. SSMC's core programs include an Indicators Report that has been produced annually since 1997 and the Sustainable San Mateo County Awards Event which has been held annually since 1999.

Sustainable Silicon Valley (SSV). SSV is a collaboration of businesses, governments, and non-governmental organizations that are identifying and addressing environmental and resource pressures in Silicon Valley. As its first initiative, SSV engage Silicon Valley organizations to work towards a goal of reducing regional carbon dioxide emissions 20% below 1990 levels by 2010. SSV's Net Positive Bay Area 2050 goals are to 1) Produce more renewable energy than we consume 2) Sequester more carbon than we emit and 3) Optimize water resources to ensure water resilience. Their current strategy focus on facilitating measure projects, education, events and policies that deliver solutions by activating SSV's member network to reach the Net Positive Bay Area goals.

1.6 Local efforts

While cities may be vulnerable to climate impacts, they also can play a critical role in reducing the emissions that exacerbate climate impacts. With their concentrations of people and activities at high densities, cities can use resources such as energy, materials, and land more efficiently. Cities are places where high-level knowledge-based activities congregate, along with the expertise needed to tackle climate change. This is especially true in the San Francisco Bay Area.

AB 32 identifies local governments as essential partners in achieving California's goal to reduce GHG emissions. Local governments have primary authority to plan, zone, and permit how and where land is developed to accommodate population growth and the changing needs of their jurisdiction. Cities have varying degrees of responsibility for the collection and processing of

waste and have responsibility for other environmental infrastructures, such as energy and water. Cities own and manage buildings and vehicle fleets and are able to form partnerships with private interests to mobilize and coordinate community action. Furthermore, cities are uniquely positioned to promote economic development that emphasizes sustainable development and local green-collar jobs.

To date, the City of Belmont has undertaken the following sustainability efforts:

- The City adopted the 2013 CALGreen Building Code with no local amendments. This code is more restrictive than the Green Building Ordinance the City had in place. This ordinance expired on January 1, 2014 when the new codes went into place.
- In the summer of 2016, the City undertook a major LED street light replacement effort. The first was the standard replacement of city owned lights with newer LED fixtures. The project replaced approximately 1,030 lights. The second project was the replacement of fixtures in several city parking lots with LED technology. This replaced 79 lights. The third project involved the replacement of 146 lantern style fixtures. Together, these projects will result in an annual energy cost savings of approximately \$50,000, reduced annual energy consumption 343,477 kWh and the annual avoidance of 179,000 lbs. of CO2 emissions. These efforts were in addition to the replacement of 240 existing street light fixtures with LED fixtures in 2009 through the CEC's Energy Efficiency Conservation Block Grant Program.
- Implemented a program for cost-fee recovery for solar projects if the contractor follows a set application checklist.
- The City has adopted procedures in accordance with AB 2188 which streamlines permits for solar residential projects.
- Completed three rounds of audits and upgrades to City facilities through the San Mateo Energy Watch Program. In 2009, City Hall, Barrett Community Center, Corporation Yard and Conference Center received lighting retrofits.
- In 2015, through a PG&E energy efficiency rebate program, the City completed upgrades to City Hall and the Library. These improvements included retro-commissioning and installation of HVAC controls, installation of LED lighting, installation of efficient air conditioning in the server room, and the elimination of pneumatic controls. The efficiency improvements at the library have resulted in a 46% reduction in electricity use and an 83% reduction in gas use, savings the City over \$50,000 annually. The efficiency improvements at City Hall have resulted in a 25% reduction in electricity use and an 85% reduction in gas use.

- Currently including LED street lights in City Complete Streets implementation.
- In response to the drought, water conservation efforts in 2014 yielded significant water savings. In 2013, the City used 30,072,592 gallons of water in City buildings, parks, City and School District athletic fields, medians and right of ways. In 2014, the City used 22,550,704 gallons at these same facilities, a savings of 25% compared to 2013.
- Adopted a Housing Element consistent with RHNA for the 2015-2023 planning timeframe
- Implemented a City shuttle program which includes a senior shuttle service. The Twin Pines Senior and Community Center offers a van shuttle service for seniors wishing to visit the Center.
- Implemented and continues to install and support bike lanes and biking infrastructure
- Acquired significant open space areas through a policy initiative aimed at reducing development (one third of the City is currently open space).
- The City manages a community garden at the Barrett Community Center. Built in 1994, the garden provides 26 plots for residents.
- The Tree Ordinance was amended by the City Council in 2011 and is anticipated to be amended in Summer 2017. The Ordinance promotes the healthy growth of trees and controls the removal of trees within the City. The Ordinance requires a permit be obtained when removing certain tree species at designated sizes and replacement trees as appropriate for removals.
- Passed Measure F to reduce density and increase minimum lot size in the hillside areas of Belmont (Measure F requires voter approval of any future amendments to the zoning ordinances governing the Hillside Residential districts).
- A Draft of the 2035 General Plan (GP) Update and Belmont Village Specific Plan (BVSP) was completed and is progressing through its public review.
- Contracted with Recology of San Mateo County to provide composting services for organics along with solid waste services.
- Belmont's Parks and Recreation Department has instituted a waste management system in many of the most popular parks that includes separation of waste into trash, recycling and compost. The City hopes to expand this effort to all parks in the near future.

- Embrace Environmentally Responsible Purchasing objectives.
- Adopted single-use bag and polystyrene ban ordinances.
- Completed 2010 Municipal Operations and 2013 Community GHG Inventories

1.7 City of Belmont's Climate Action Plan Process

This climate action plan was developed in partnership with the City and County Association of Governments of San Mateo County (C/CAG). The climate action plan template project sponsored by C/CAG assists member jurisdictions and other interested local governments to develop climate action plans that are consistent with California Environmental Quality Act (CEQA) guidelines, including both the CEQA Guidelines Amendments effective March 18, 2010, and the BAAQMD's CEQA Air Quality Guidelines (Updated May 2011). By combining resources, the climate action plan template project promotes high quality climate action plans that can be used to meet regulatory requirements and support planning efforts to reduce GHG emissions. The template project and Belmont's climate strategy is based on the ICLEI – Local Governments for Sustainability (ICLEI) 5-Milestone process as seen in the framework below.

1.7.1 Framework for Climate Action

The ICLEI 5-Milestone process is a management process based on increasing knowledge through each step to achieve the targeted GHG emissions reductions.

Figure 4: Iterative Management Processes for Climate Action (Source: ICLEI)



- **Leadership Commitment:** Define the overall vision and goals for the community.
- **Milestone 1 (Inventory Emissions):** Conduct a baseline emissions inventory and forecast.
- **Milestone 2 (Establish Target):** Adopt an emissions reduction target for the forecast year.
- **Milestone 3 (Develop Climate Action Plan):** Identify feasible and suitable strategies and supporting actions to reduce emissions and achieve co-benefits aligned with the overall vision and goals.
- **Milestone 4 (Implement Climate Action Plan):** Enact the plan.
- **Milestone 5 (Monitor/Evaluate Progress):** Establish feedback loops to assess and improve performance, including an assessment and adjustment of the necessary human, financial and data resources.

In November 2009, all San Mateo County member jurisdictions completed their 2005 community and municipal GHG inventories as part of a joint effort with ICLEI, Joint Venture Silicon Valley Network, and the County of San Mateo and funded by C/CAG. This C/CAG climate action plan template project follows this framework by assisting member jurisdictions with Milestones 2 and 3. Belmont is responsible for implementing the actions identified in this climate action plan to complete Milestone 4.

To support Milestone 5, C/CAG is developing forecasting and calculation tools to allow its member jurisdictions to track total community GHG emissions. The tool will assist cities to monitor the effectiveness of emissions reduction efforts. Specifically, C/CAG is working with Hara, Inc., a software provider, to develop a customized online solution that may be used by each City in the County to track GHG emissions and emission reductions achieved from various strategies. More information about the Hara tool is provided in the User's Guide for this Template document.

1.7.2 Public Outreach and Community Engagement



The City of Belmont has the opportunity to leverage existing programs funded by the State of California, MTC, ABAG, BAAQMD, C/CAG, PG&E, and others to support community actions to improve energy efficiency, increase renewable energy, facilitate alternative transportation initiatives, and reduce solid waste generation. This Plan proposes that the City seek to distribute information widely on programs and funding opportunities for residents and businesses to support their sustainability efforts. The adoption of the Climate Action Plan (CAP) is an important companion action that is concurrent with the City's 2035 General Plan (GP) Update and Belmont Village Specific Plan (BVSP).

Outreach actions that the City has undertaken as part of its GP Update and BVSP include:

- Posting information on the City's website and program marketing material at key locations including City Hall and the Belmont library;
- Conducting community stakeholder interviews;
- Preparation of a community wide survey;
- Hosting of community workshops and City Council/Planning Commission Study Sessions;
- Conducting outreach workshops with Notre Dame De Namur University (NDNU) and Carlmont High School students; and,
- Preparation of GP Update and BVSP websites



2 Greenhouse Gas Inventory and Forecast

The emissions inventory provides an important foundation for the climate action plan, providing a baseline year, 2005, against which progress toward the City goal of reducing greenhouse emissions 50% by 2035 can be measured. The completed Plan will include a business-as-usual (BAU) forecast of GHG emissions, which will enable the City of Belmont to estimate the amount of emissions reductions needed to meet its goal.

2.1 Inventory Sources and Data Collection Process

An inventory of GHG emissions requires the collection of information (data) from a variety of sectors and sources. The emissions inventory completed for the City of Belmont follows the standard outlined in the BAAQMD's GHG Plan Level Quantification Guidance (dated May 2012), as well as the Local Government Operations Protocol¹³.

Table 1 summarizes the sectors, emissions sources, and energy types included in our GHG inventory.

¹³ Local Government Operations Protocol – For the quantification and reporting of greenhouse gas emissions inventories (Version 1.0). Developed in partnership by California Air Resources Board, California Climate Action Registry, ICLEI – Local Governments for Sustainability, and The Climate Registry. September 2008. Note that a newer version (version 1.1, dated May 2010) of the LGOP is available; however, at the time the GHG inventory was completed for the City of [CITY], version 1.0 was the only version available.

Table 1: Sectors and Emissions in the GHG Inventory

Sector	Emissions sources	Energy types
Residential	Energy and water use in residential buildings	Electricity Natural gas
Commercial	Energy and water use in commercial, government and institutional buildings	Electricity Natural gas
Industrial	Energy and water use in industrial facilities, and processes	Electricity Natural gas
Transportation and Land Use*	All road vehicles Public transportation Light rail Off-road vehicles/equipment	Gasoline Diesel Compressed natural gas Liquefied natural gas Biodiesel
Waste	Landfills Waste stream	Landfill gas (methane)
Wastewater**	Process and fugitive emissions from treating wastewater, and associated stationary emissions	Not applicable
Water**	To be determined	To be determined
Stationary Sources**	Stationary combustion of fuel in various equipment, such as boilers and backup generators.	Various – may include natural gas, propane, and diesel

* Some sectors may be updated in a new version of the BAAQMD GHG Plan Level Quantification Guidance.¹⁴

** Water, Wastewater, and Stationary Sources were included in the 2010 inventory, but not the 2005 inventory.

While the BAAQMD GHG Plan Level Guidance recommends the inclusion of GHG emissions from water processing, delivery and wastewater treatment that occurs outside of the city's boundary, these emissions are not included in Belmont's baseline inventory due to lack of accurate data on water usage in the City of Belmont in the baseline year, and lack of data on the energy used for water processing and delivery and wastewater treatment in the baseline year. The following are emission sources that are mentioned in the BAAQMD GHG Plan Level Guidance, but were excluded from the City's inventory because they are not applicable in Belmont: Airports and sea ports, Non-road vehicle use (planes, trains, ships), and water travel.

In 2012, ICLEI developed the U.S. Community Protocol¹⁵, which is the first U.S.-specific protocol for developing community-wide greenhouse gas emissions estimates. In 2013, ICLEI released an updated Version 1.1 of the U.S. Community Protocol. All future inventories should utilize this protocol. Future inventories will also utilize the most recent version of the Local Government Operations Protocol, as well as any updated guidance from the BAAQMD.

The industry-accepted methodology for quantifying a community-wide GHG emissions inventory focuses on emissions that occur from combustion sources within city limits and from electricity

¹⁴ For updates to the GHG Plan Level Quantification Guidance, check the BAAQMD website:

<http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>

¹⁵ U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (Version 1.0). Developed by ICLEI – Local Governments for Sustainability. October 2012.

consumption. In the future, there may be the opportunity and need to quantify GHG emissions associated with the goods and products procured by communities and its residents. This type of lifecycle emissions accounting is not included in this climate action plan.

2.2 Baseline Emissions Inventory for 2005

In the base year of 2005, the City of Belmont emitted approximately 167,648 metric tons of carbon dioxide equivalent (CO₂e) from the residential, commercial, industrial, transportation, waste, and municipal sectors.¹⁶ Municipal sector emissions are calculated and reported because the City of Belmont generally has more control over these emissions than emissions from the other sectors, and thus the City of Belmont can implement specific policies and programs to reduce these municipal emissions. However, in the context of the community-wide inventory, the municipal emissions are included in the commercial/industrial sector. Burning fossil fuels in vehicles and for energy use in buildings and facilities is the largest contributor to Belmont's GHG emissions. Table 2 provides a summary of total citywide (i.e. community and municipal) GHG emissions.

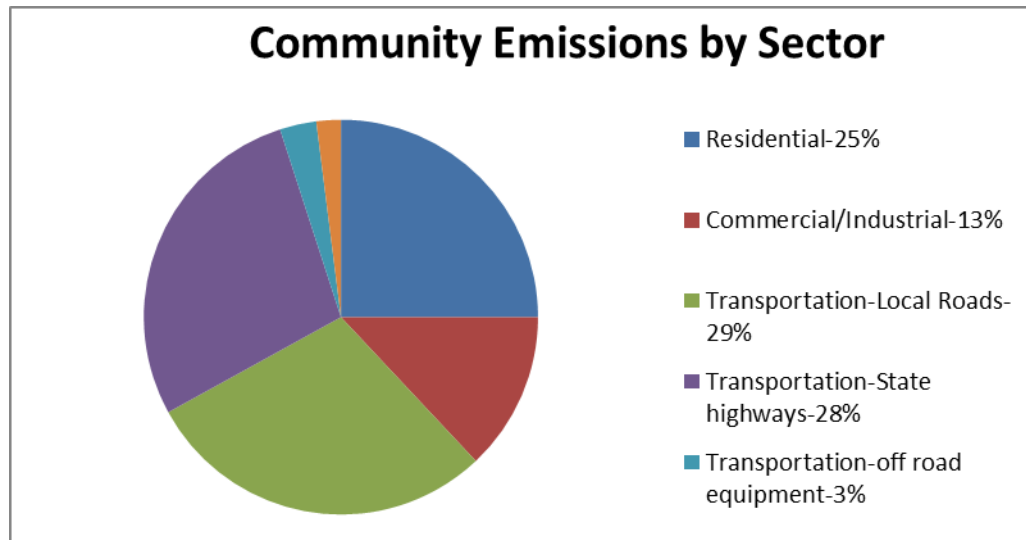
Table 2: 2005 Community Emissions by Sector

Sector	GHG Emissions (MT CO ₂ e)	Percentage of GHG Emissions
Residential	42,134	25%
Commercial/Industrial	21,052	13%
Transportation – Local roads	47,994	29%
Transportation – State highways	46,770	28%
Transportation – Off-road equipment	5,790	3%
Generated Waste	3,908	2%
TOTAL	167,648	100%

The residential, commercial, and industrial sectors represent emissions that result from electricity and natural gas used in both private- and public-sector buildings and facilities. The transportation sector includes emissions from private, commercial, and fleet vehicles driven within the City's geographical boundaries as well as the emissions from transit vehicles and the City-owned fleet. Off-road equipment includes lawnmowers, garden equipment, and construction, industrial, and light commercial equipment. Figure 5 shows the proportion of Belmont's total GHG emissions from all major sources for 2005.

¹⁶ Carbon dioxide equivalent is a unit of measure that normalizes the varying climate warming potencies of all six GHG emissions, which are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). For example, one metric ton of methane is equivalent to 21 metric tons of CO₂e. One metric ton of nitrous oxide is 210 metric tons of CO₂e.

Figure 5: Community Emissions by Sector¹⁷ (2005)



As shown above, the three largest sectors of emissions are local road transportation, State highway transportation and residential energy use.

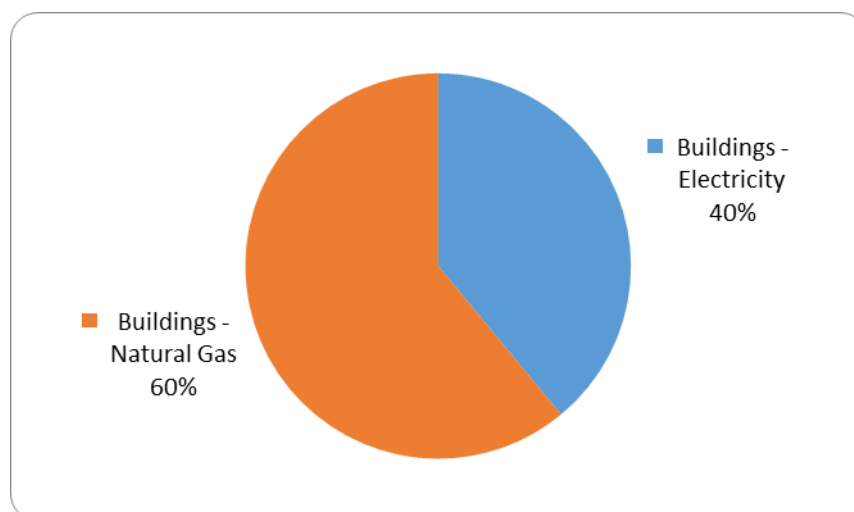
2.2.1 Electricity and Natural Gas Emissions

In 2005, electricity and natural gas use for buildings and facilities accounted for 38 percent of Belmont's total emissions. Residential buildings accounted for 25 percent (42,134 MTCO₂e), commercial/industrial facilities (including municipal facilities) accounted for 13 percent (21,151 MTCO₂e).¹⁸Of the total 63,186 MTCO₂e emitted from consumption of electricity and natural gas, 40 percent (27,102 MTCO₂e) was the result of electricity consumption, and 60 percent (40,236 MTCO₂e) was the result of natural gas consumption.

¹⁷ While Belmont's water emissions are not displayed separately in the chart above, they have been accounted for in the commercial/industrial and residential building energy sectors.

¹⁸ June 25th email page 8 3.2

Figure 6: Building Energy Use – Fuel Type



It is important to note that emissions associated with the generation of electricity, which make up a significant portion of the greenhouse gasses associated with building energy, can vary widely from year to year. The GHG emissions associated with electricity use is based on an emissions factor specific to PG&E's territory and is calculated annually by PG&E and then made available to Cities. The source of the emission factor used for the 2005 baseline inventory is the PG&E Power/Utility Protocol (PUP) spreadsheet of the PG&E California Climate Action Registry Report. In future inventory years, the emission factor may be found in the Additional Optional Information tab of PG&E's Electric Power Sector report spreadsheet, which is part of PG&E's Report to The Climate Registry. PG&E's specific emissions factor is calculated by dividing PG&E's total emissions from their power plants (in pounds of CO₂) by the total amount of electricity (in megawatt-hours or MWh) delivered to end users. This factor varies year over year because PG&E's electricity sources change. For instance, the utility specific emissions factor for PG&E in 2006 was 455.81 lbs/MWh whereas in 2008 it was 641.35 lbs/MWh. For PG&E, the variance is typically dependent on the availability of hydroelectric resources. During low precipitation years, there is less water available to generate emissions free hydropower. Because of this, PG&E must compensate by supplying more electricity generated from natural gas or coal.

For the 2005 baseline inventory, the 2005 emissions factor was used. For future inventories, a three-year average emissions factor could be used to address the large variance that may occur from year to year. Emissions from natural gas usage are calculated using the emissions factor from the EPA Climate Leaders, Stationary Combustion Guidance (2007), Table A-1, based on the U.S. EPA, Inventory of Greenhouse Gas Emissions and Sinks: 1990-2005 (2007), Annex 3.1 (see also Local Government Operations Protocol, Table G.3).

2.2.2 Transportation Emissions

In 2005, transportation emissions accounted for 60 percent of Belmont's total emissions. Travel on local roads accounted for 29 percent (47,994 MTCO₂e), travel on state highways within city limits accounted for 28 percent (46,770 MTCO₂e), and emissions from off-road equipment, such as lawn and garden or construction and industrial equipment, accounted for 3.45 percent (5,790 MTCO₂e). For off-road equipment, residential lawn and garden equipment emitted 580 MTCO₂e, and construction, industrial, and light commercial equipment emitted 5,210 MTCO₂e.

On-road transportation emissions are based on figures for total VMT for the City of Belmont provided by the Metropolitan Transportation Commission (MTC) and calculated from 2005 California Public Road Data, Highway Performance Monitoring System, State of California, Department of Transportation and Caltrans GIS data of state highway road segments divided into jurisdictional segments. Off-road equipment emissions data is calculated from the Bay Area Air Quality Management District, using EMFAC 2007 as a proxy for unavailable 2005 data. Figure 7 summarizes the proportion of total on-road transportation emissions from highway versus local roads travel. Figure 8 summarizes the proportion of total off-road transportation emissions from residential versus commercial equipment.

Figure 7: Transportation Emissions – Highways v. Local Travel

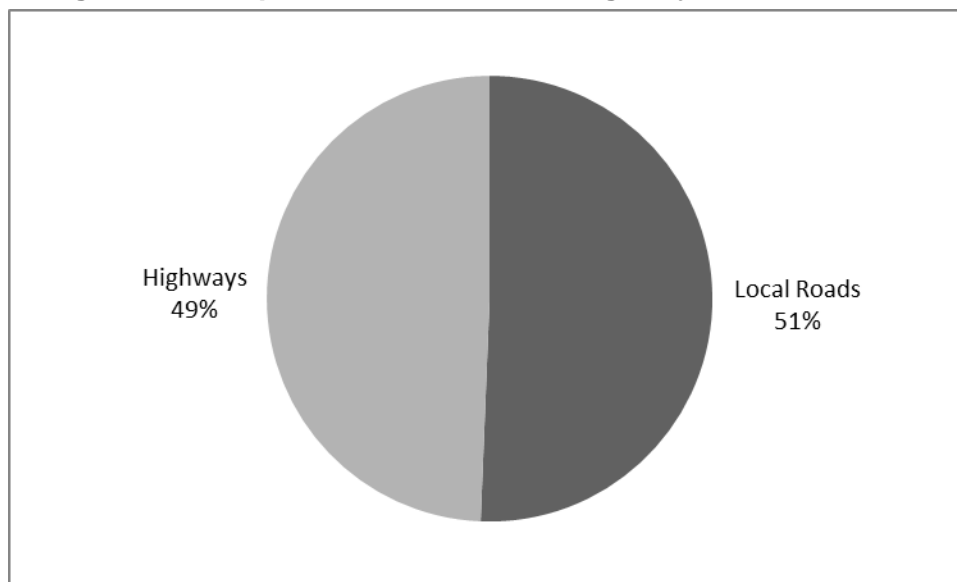
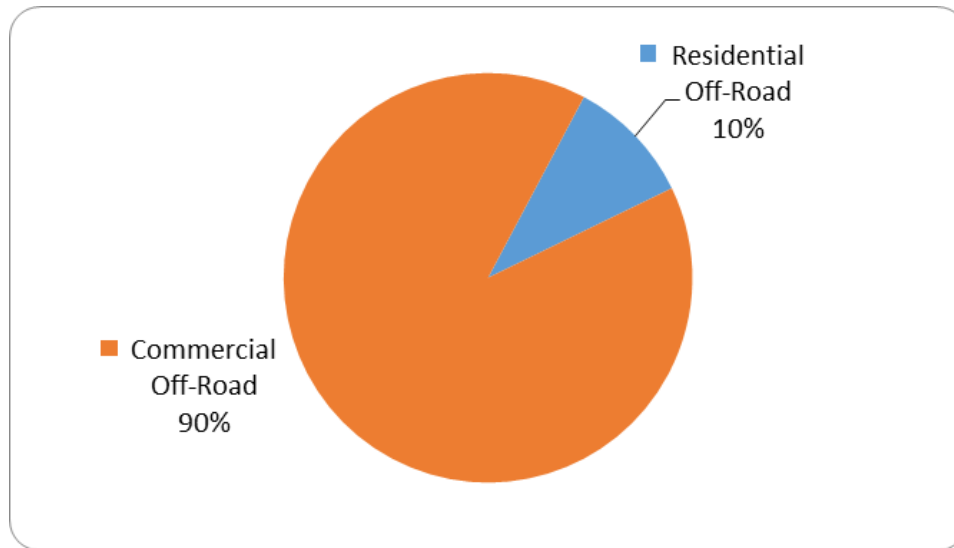


Figure 8: Transportation Emissions – Residential v. Commercial Off-road Equipment



2.2.3 Solid Waste

In 2005, Belmont sent 21,211 tons of solid waste to landfills, resulting in 3,908 MTCO₂e¹⁹. Another 36 MTCO₂e of emissions are estimated from the 248 tons of alternative daily cover (ADC) used on the surface of the active face of municipal landfills to control odors, blowing litter, and scavenging. Together, landfilled solid waste and ADC accounted for approximately 2 percent of Belmont’s total emissions.

Emissions from waste result from organic materials decomposing in the anaerobic environment of a landfill that produces methane—a GHG 21 times more potent than carbon dioxide. Organic materials (e.g., paper, plant debris, food waste, and so forth) generate methane within the anaerobic environment of a landfill while non-organic materials do not (e.g., metal, glass, and so on). Table 3 shows the approximate breakdown of the materials Belmont sent to landfills in 2005. Materials that do not release GHGs as they decompose are included in the “All Other Waste” category.

¹⁹ Table 7 (2010) Generate Waste Data and Emissions 2005 and 2010, 2010 Community Greenhouse Gas Inventory Report

Table 3: Assumed Waste Composition²⁰

Waste Type	Waste Share
Paper Products	21.0 %
Food Waste	14.6 %
Plant Debris	6.9 %
Wood/Textiles	21.8 %
All Other Waste	35.7 %
TOTAL	100 %

2.2.4 Municipal Operations

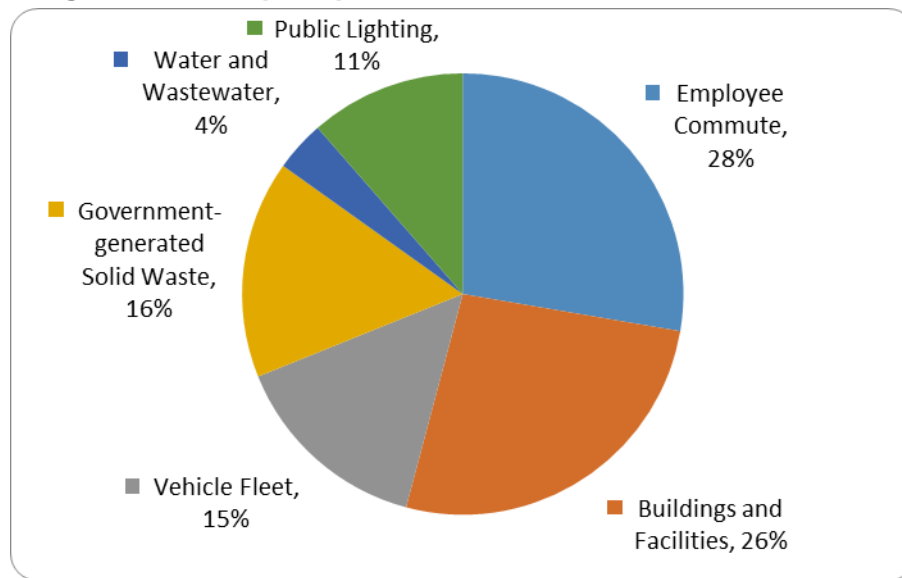
In 2005, Belmont's municipal operations generated 1,505 MTCO₂e, accounting for slightly less than one percent of the City's total emissions. Table 4 and Figure 9 show that employee commute was the largest source of government operations emissions, accounting for 28 percent of the total, followed by municipal buildings and facilities at 26 percent, government-generated solid waste at 16 percent, vehicle fleet at 15 percent, and public lighting at 11 percent.

Table 4: 2005 Belmont Government Operations Emissions by Sector

Sector	Greenhouse Gas Emissions (metric tons CO ₂ e)
Employee Commute	417
Buildings and Facilities	398
Vehicle Fleet	222
Wastewater	1
Government-generated solid waste	240
Water transport	56
Public lighting	172
TOTAL	1,505

²⁰ Waste characterization: CIWMB 2004 Statewide Waste Characterization Study. This state average waste characterization accounts for residential, commercial and self-haul waste. <http://www.ciwmb.ca.gov/Publications/default.asp?pubid=1097>

Figure 9: Municipal Operations – Greenhouse Gas Emissions



2.2.5 Emissions Forecast for 2020 and 2035

Based on the 2005 community and municipal operations emissions inventories, the City of Belmont projected a forecast of future emissions for the year 2020 and 2035. The emission forecast represents a “business-as-usual” prediction of how GHG emissions would grow in the absence of GHG policy. Conducting an emissions forecast is essential for developing the climate action plan because one must compare future reductions with future emissions levels, not current levels.

The projected business-as-usual GHG emissions are based on the emissions from the existing growth pattern and general plan prior to the adoption of this climate action plan. More specifically, business-as-usual emissions would occur if the City of Belmont were to continue its 2013 patterns of travel, energy and water consumption, and waste generation and disposal. Therefore, the business-as-usual emissions are projected in the absence of any mitigation measures, policies or actions that would reduce emissions over time, including landmark state legislation described in section 1.3. Programs, policies, and measures implemented after 2005 are considered beyond business-as-usual. The projections from the baseline year of 2005 uses growth factors specific to each of the different economic sectors. Table 5 below summarizes the results of the forecast.

Table 5: Belmont “Business as Usual” Emissions Forecast for 2020

Emissions Sources	2005 (MTCO ₂ e)	2013 (MTCO ₂ e)	Annual Growth Rate: 2013- 2020	2020 BAU Emissions (MT CO ₂ e)	Annual Growth Rate: 2013- 2035	2020 BAU Emissions (MT CO ₂ e)
Residential	42,134	38,778	0.65%	40,584	0.62%	44,457
Commercial/Industrial	21,052	19,730	1.34%	21,208	1.23%	25,825
Transportation	100,554	97,490	1.04%	99,608	1.04%	122,515
Waste	3,908	2,742	0.83%	3,191	0.78%	3,254
Water	0	311	0.83%	421	0.78%	369
TOTAL	167,648	159,051	0.49%	165,013	1.12%	196,422

We projected the emissions forecast for each sector, because specific factors affect each sector differently (e.g. new building energy codes or new fuel economy standards for vehicles). This approach provides a better approximation of future emissions. The following points explain how the emissions forecast was estimated for each sector:

- For the residential energy sector, the compounded annual population growth rate was calculated from 2013 through 2020 and from 2013 through 2035 using population projections from the *Comprehensive 2035 General Plan Update* and *Belmont Village Specific Plan*.
- For the commercial energy sector, the compounded annual job growth rate was calculated from 2013 through 2020 and from 2013 through 2035 using job projections from the *Comprehensive 2035 General Plan Update* and *Belmont Village Specific Plan*.
- For transportation, the City of Belmont relied on “Transportation Energy Forecasts for the 2007 Integrated Energy Policy Report,” in which the CEC projects that on-road vehicle miles traveled (VMT) will increase at an annual rate of 1.04 percent per year through 2035.²¹
- For waste-related emissions growth, the primary determinate for growth in emissions for the waste sector is population and jobs. Therefore, the compounded annual population and jobs growth rates for 2013 to 2020 and 2013 to 2035 was used to estimate future emission in the waste sector. This growth rate for 2013 to 2020 is 0.83% and 0.78% for 2013 to 2035.

²¹ Report available at: <http://www.energy.ca.gov/2007publications/CEC-600-2007-009/CEC-600-2007-009-SF.PDF>. Compounded Annual growth rate for 2005-2020 is calculated from Table 4 on page 12. In light of recent fuel cost increases, the calculation assumes high fuel cost scenario.

2.3 Emission Reduction Targets

The *California AB 32 Scoping Plan* seeks to bring California to a low carbon future, reaching 1990 emissions levels by 2020. As part of that reduction, the plan asks municipal governments to reduce their emissions by at least 15 percent by 2020 compared with current levels (current levels are defined as 2008 levels or earlier). The plan also directs local governments to assist the state in meeting California's emissions goals. Many cities have consequently adopted community-wide emissions reduction targets at least 15 percent below 2005 levels by 2020. Some cities in the Bay Area have sought even stricter emissions targets. For example, San Francisco established a target in 2002 of reducing emissions 20 percent below 1990 levels by 2012 and surpassed this target by achieving a 23 percent reduction.^{22 23} Seattle, Portland, and Denver have set similar targets. However, the vast majority of Bay Area cities have adopted the 2020 target of 15 percent reduction compared with 2005 levels as it is in line with State objectives and technically achievable. In line with the City of Belmont's General Plan update to 2035, this Climate Action Plan also sets a second GHG reduction target of 50% below 2005 levels by 2035.

This climate action plan summarizes the actions that City of Belmont is planning to take to reduce emissions within our community. Additionally, the Draft 2035 General Plan Update proposes a mandated 50% reduction in greenhouse gas emissions by 2035.

2.3.1 Reductions from State-Level Actions

In addition to the actions outlined here, regulations aimed at reducing GHG emissions at the state and regional levels will also contribute to emissions reductions in Belmont. For example, the California Renewable Portfolio Standard (RPS) mandates that 33 percent of electricity sold by the State's investor-owned utilities be generated from renewable resources by 2020. These actions were summarized in Section 1.5 of this report. A summary of the expected emission reductions from state programs is provided in Table 6 below. The impact of state-level actions on reducing local emissions is significant, and is shown in relation to the City of Belmont's emissions baseline, business-as-usual forecast, and reduction target in Figure 10.

²² City of San Francisco 2004. *Climate Action Plan*. <http://www.sfenvironment.org/downloads/library/climateactionplan.pdf>

²³ City of San Francisco 2015. *Mayor Lee & Board President Breed Announce San Francisco Exceeds Greenhouse Gas Emissions Reduction Goal*. <http://sfmayor.org/article/mayor-lee-board-president-breed-announce-san-francisco-exceeds-greenhouse-gas-emissions>

Table 6: Total Emission Reductions from State of California Programs

State Initiative	Sector	% Emissions reduction from applicable sector in 2020	2020 reduction in City's emissions (MT CO ₂ e)	% Emissions reduction from applicable sector in 2035	2035 reduction in City's emissions (MT CO ₂ e)
AB 1493 (Pavley)	Transportation	19.7%	19,623	19.7%	24,136
LCFS	Transportation	7.2%	7,172	7.2%	8,821
33% RPS	Electricity (Energy)	21%	4,160	34%	9,177
County TCAP	Transportation	12%	11,953	12%	14,702
50% Petroleum reduction (2030)	Transportation	0%	0	11.1%	13,599
100% ZNE New Residential (2020)	Residential	0%	0	27%	12,004
100% ZNE New Commercial (2030)	Commercial	0%	0	9%	2,324
50% ZNE Existing Commercial (2030)	Commercial	0%	0	41%	10,588
A. Total Statewide Initiative Emissions Reductions			42,908	N/A	95,351

2.3.2 The City of Belmont Reduction Target

The City of Belmont is committed to an emissions reduction target of 15 percent below the baseline 2005 levels by 2020. This goal is selected to be consistent with the *California AB 32 Scoping Plan* and the Bay Area Air Quality Management District guidelines for a qualified GHG emission reduction strategy and to be achievable by City-supported measures identified in the CAP. In line with the City of Belmont's General Plan update to 2035, this Climate Action Plan also sets a second GHG reduction target of 50% below 2005 levels by 2035.

The City of Belmont is committing to reducing community-wide greenhouse gas emissions 50 percent by 2035, a reduction of 112,598 metric tons of carbon dioxide

Figure 10 below illustrates how the business-as-usual emissions are estimated to increase, thus widening the emissions reductions needed by 2020 and 2035. Figure 10 also shows the emissions reductions expected from state- and county-level actions, and the reductions needed to reach the City of Belmont's emission target. Table 7 shows the baseline emissions, forecasted emissions, targeted emissions, and emissions needed to reach the target. Additionally, the City has a goal of reducing carbon emissions by 50% by 2035 to 83,824 metric tons of carbon dioxide equivalents.

Figure 10. Belmont GHG Reduction Target (15% below 2005 levels by 2020 and 50% below 2005 levels by 2035)

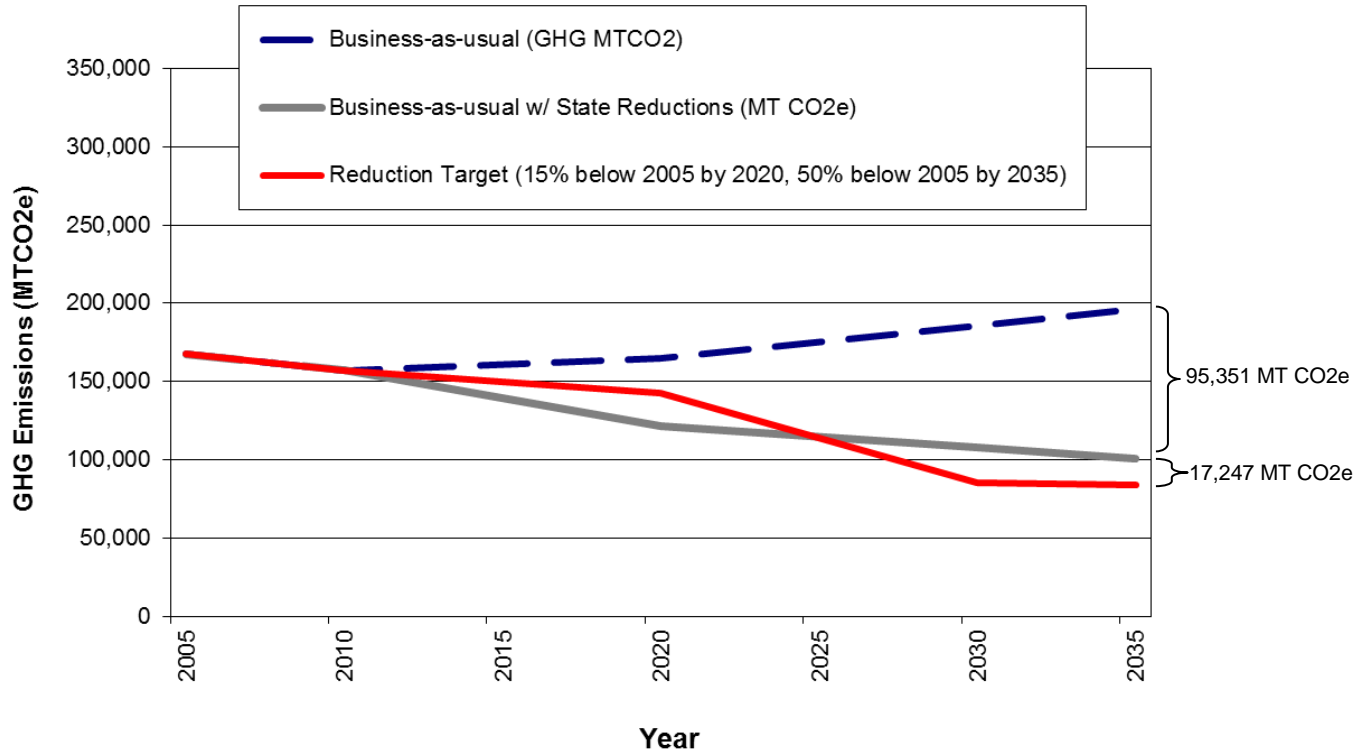
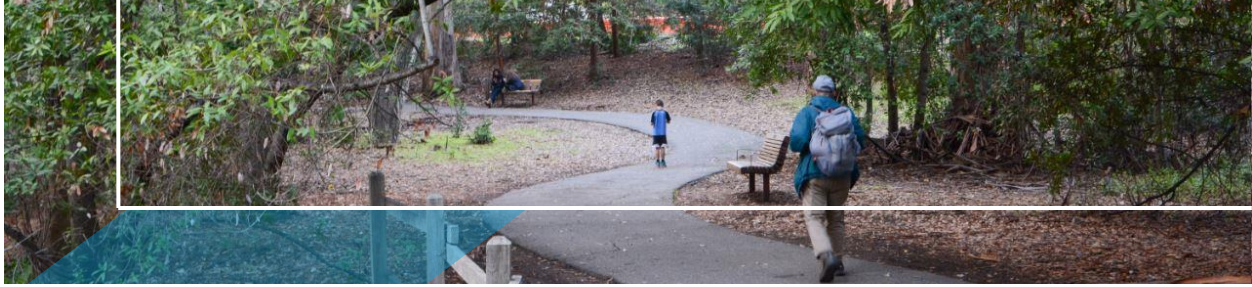


Table 7: GHG Emissions Projection and Reduction Target

Description	Emissions
2005 Base Year Emissions (MTCO ₂ e)	167,648
2020 Target Emissions at 15% below 2005 (MTCO ₂ e)	142,501
2020 BAU Emissions (MTCO ₂ e)	165,013
2020 Required Reduction (MTCO₂e)	22,512
2035 Target Emissions at 50% below 2005 (MTCO ₂ e)	83,824
2035 BAU Emissions (MTCO ₂ e)	196,422
2035 Required Reduction (MTCO₂e)	112,598



3 Climate Action Strategies

This climate action plan is a beginning of a journey towards a more sustainable Belmont. In these pages, the citizens of Belmont will find policies and programs that aim to reduce emissions, save energy (and money), and help Belmont continue to be a beautiful and healthy place to live, work, and play as time goes on.

By adopting this climate action plan, the City is committing to take action to reduce GHG emissions. The Plan provides a prioritized list of actions, each of which should be further developed, studied, and vetted independently before being implemented. The programs and policies described give Belmont a viable path towards reducing emissions that, combined with emissions reductions resulting from State and regional policies, will meet the emissions reduction goals established in AB 32.

The previous chapters presented steps 1 and 2 in the Framework for Climate Action (see section 1.6.1): the emissions inventory of Belmont and the community emissions reduction target.

The following sections represent Step 3: the Climate Action Plan.

Each section below outlines the specific actions, which we call “measures,” that seek to reduce GHG emissions from Belmont. For methodology of how measures were selected and prioritized for action, see Section 4.1. Some measures aim to reduce emissions from the community at large, while other measures may specifically focus on the operations of the City of Belmont. Also, all measures are assumed to lead to specific, quantifiable reduction of GHG emissions.

3.1 Energy



In the United States, buildings account for 70 percent of total electricity use and about 40 percent of GHG emissions.²⁴ The State of California has long been a leader in implementing policies aimed at improving the energy efficiency of its building stock. The state is committed to first meet its energy needs “through all available energy efficiency and demand reduction resources that are cost effective, reliable and feasible.”²⁵

Since the 1970s, California has led the nation in developing and implementing successful energy-efficiency efforts. The California Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6 of the California Code of Regulations) mandates minimum levels of energy efficiency in both new construction and renovation projects. These requirements will be updated in 2013 to further increase building and appliance energy efficiency. California has also set targets for “zero net-energy” new buildings, in which efficiency and on-site generation are combined to reduce residential buildings to zero net-energy use by 2020 and commercial buildings by 2030.²⁶

Building energy is the sector with the most immediately achievable and affordable reduction opportunities. Energy efficiency is the most cost-effective measure for GHG reductions and also has numerous co-benefits such as cost savings over time and promotion of green collar jobs. Design and construction of new buildings, or major renovations of existing ones, provides an opportunity to implement energy-saving measures that reduce GHG emissions. Generous utility rebates and federal tax incentives make investing in energy efficiency increasingly attractive. Along with energy efficiency, California has a long history of supporting renewable energy generation. With the idea of “reduce, then produce,” a sensible energy policy seeks to first maximize energy efficiency and then look to generate electricity with low-carbon fuels and renewable resources.

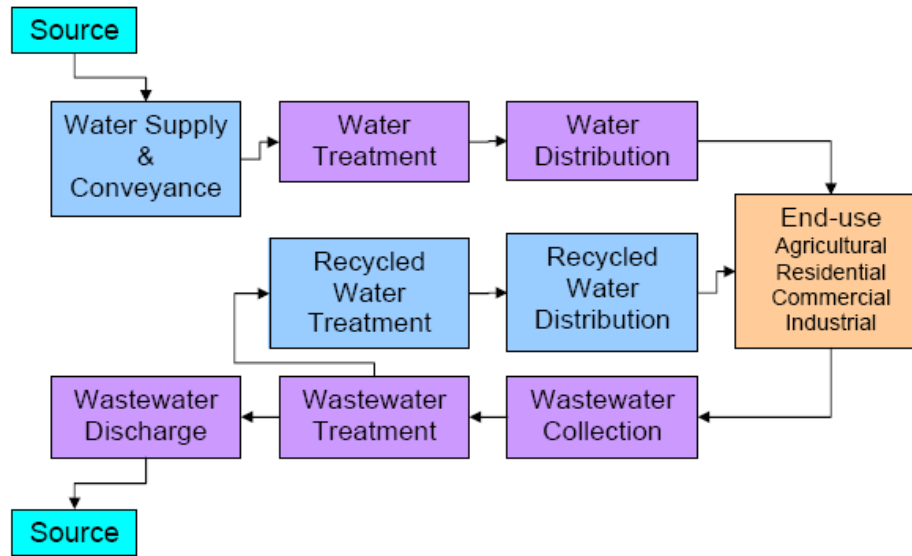
Energy and water use are linked. Energy is needed to transport and to treat water so that it is safe for public consumption. Energy is also used to treat wastewater so that it can be discharged back to the environment. Figure 11 demonstrates California’s water use cycle.

²⁴ Fuller *et al.* 2009. *Toward a Low-Carbon Economy: Municipal Financing for Energy Efficiency and Solar Power*. Environment Magazine

²⁵ “Energy Action Plan I”, California Energy Commission, California Public Utilities Commission and Consumer Power and Conservation Financing Authority. May 8, 2003. Available at: http://docs.cpuc.ca.gov/word_pdf/REPORT/28715.pdf

²⁶ California Energy Commission, 2007 *Integrated Energy Policy Report*, CEC-100-2007-008-CMF

Figure 11: California's Water Use Cycle



Graphic: California Energy Commission

Energy is used in each step of the process. Water is collected, treated, and distributed to end users in farms, residences, businesses, and industries. Energy, usually natural gas, is used to heat water for use in buildings. Then energy is needed to treat water for discharge back to the environment. Nineteen percent of the state's electricity and 32 percent of the state's natural gas is consumed during this cycle.²⁷ 58 percent of the electricity and 98.5 percent of the natural gas consumption stems from just the residential, business, and industrial end users.

Reducing water consumption through efficiency and conservation can make a big impact on energy consumption as well as protect against drought, a common problem in California. Senate Bill x7-7 was enacted in November 2009, requiring all water suppliers to increase water use efficiency. The legislation sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020. The California State Integrated Water Management Planning Process promotes bringing together and prioritizing water-related efforts in a systematic way to ensure sustainable water uses and reliable water supplies.

In this chapter, we propose City programs and initiatives that will promote energy and water efficiency as well as renewable energy in both existing and new buildings.

²⁷ California Energy Commission 2005. *California's Water-Energy Relationship*.

3.1.1 **Goal: Increase municipal, residential, and commercial energy efficiency, renewable energy, efficient water use, and green building.**

Measure Category	Description of Measure	2020 GHG Reduction (MTCO ₂ e)	2035 GHG Reductions (MTCO ₂ e)
Energy	EC1 – Adopt CALGreen for non-residential buildings triennially. Work to mandate achievement of CALGreen Tier 1 energy performance.	122	293
Energy	EC2 – Update CALGreen for residential buildings triennially. Work to mandate achievement of CALGreen Tier 1 energy performance.	643	643
Energy	EC3 – Provide financial incentives for solar PV and hot water system installation.	270	776
Energy	EC4 – Provide or encourage residential energy audits and retrofits. Leverage existing rebates/add additional rebates for energy efficient retrofits.	101	290
Energy	EC5 – Promote and assist with marketing and outreach for PG&E energy efficiency and demand response programs for the nonresidential sector. Leverage existing rebates/add additional rebates for energy efficient retrofits.	175	503
Energy	EC6- Continue to be part of the Peninsula Clean Energy (PCE) Community Choice Aggregation (CCA) Program and continue to opt for the ECO100 option (100% renewable energy) for all City facilities.	See footnote ²⁸	8,132
Energy	EM1 – Replace street, signal lights, parks and parking lot lighting with efficient lighting (LEDs, induction, etc.).	45	45
Energy	EM2 – Implement a sustainable purchasing policy that emphasizes recycled materials and Energy Star equipment.	5	5
Energy	EM3 – Mandate all new municipal buildings achievement of CALGreen Tier 1 energy performance.	11	31
Energy	EM4 – Complete feasibility study on the installation of solar or other renewable energy projects at City facilities and install where feasible. Set a goal for renewable energy purchase if installation is not feasible.	65	187
Energy	EM5 – Participate in San Mateo County Energy Watch and leveraged benchmarking to identify EE audit and retrofit projects and track energy performance.	22	63
Energy	EW1 – Promote existing and/or new rebates for water efficient appliances and fixtures.	501	794
Energy	EW2 – Adopt Bay Area Water Supply and Conservation Agency (BAWSCA) Ordinances or triennial CALGreen codes that apply to water.	501	1,190
All Sectors	A1 – Establish voluntary program that allows businesses to brand themselves as green by following sustainable practices.	7	20

²⁸ Avoided emissions in 2020 from Belmont's participation in Peninsula Clean Energy have not been included in this version of the CAP. However, Belmont's recent decision to purchase ECO100 (100% renewable) electricity for all municipal operations will result in a 100% reduction in municipal operations electricity emissions, an estimated 331 MT CO₂e decrease in emissions in 2020.

For commercial, residential and municipal energy efficiency, as well as efficient indoor and outdoor water use, Belmont will adopt the CALGreen codes triennially. As of July 2014, the 2013 California Building Energy Efficiency Standards (Title 24) and 2013 California Green Building Standards Code (CALGreen) updates went into effect, significantly increasing the energy efficiency of new construction and other major renovations of existing buildings. Further, since SB 407 requires water conservation retrofits on permitted commercial and residential building alterations or improvements projects, Belmont will provide outreach on incentives and financing, while evaluating options piloted at the state or regional level for compliance measures. The CALGreen codes also include increasingly stringent water conservation measures. Belmont has implemented the Mid-Peninsula Water District adopted BAWSCA outdoor water ordinance, and will consider future amendments to go above the CALGreen code for outdoor water conservation.

Peninsula Clean Energy (PCE) provides two electricity service offerings – ECOplus (50% renewable energy) and ECO100 (100% renewable energy). Through Belmont's participation in Peninsula Clean Energy, it has made these offerings through PCE available to all residents and businesses in the community. Residents and businesses opting for electricity through PCE, especially the ECO100 option, has the potential to substantially reduce community emissions associated with electricity. Additionally, the City has recently opted for ECO100 electricity through PCE for all City facilities.

In addition to adopting green building codes, Belmont will encourage commercial and residential energy efficiency by promoting, incentivizing, or providing energy audits and upgrades, particularly through existing incentive and on-bill financing programs administered or implemented by Energy Upgrade San Mateo County, San Mateo County Energy Watch, and PG&E, and by providing information about and access to financing, such as through PACE programs and on-bill financing programs by PG&E. Belmont will adopt residential PACE financing if it becomes a viable option.

Belmont will encourage and provide access to incentives and financing for commercial and residential renewable energy installations through PACE and by exploring group procurement programs in progress in the County of San Mateo. Belmont will promote renewable energy by assessing its current solar permitting, planning and zoning, and financing mechanisms and bringing them in line with the requirements of AB 2188 or relevant legislation as adopted. Additionally, Belmont will return to the feasibility study for municipal installations as solar installation costs fall and financing mechanisms increase. Although municipal projects may remain impracticable, the City will also continue to focus on energy efficiency efforts through the existing LED street light and parks lighting replacement projects; facility energy benchmarking,

auditing, and retrofitting through San Mateo County Energy Watch; and municipal green purchasing policies.

In response to the drought, water conservation efforts in 2014 yielded significant water savings. In 2013, the City used 30,072,592 gallons of water in City buildings, parks, City and School District athletic fields, medians and right of ways. In 2014, the City used 22,550,704 gallons at these same facilities, a savings of 25% compared to 2013. These efforts not only help to conserve water, but also the energy associated with heating and distributing water.

Lastly, Belmont will participate in and promote the County's Green Business Program to encourage energy efficiency, water conservation, and solid waste reduction in the City's commercial enterprises.

3.2 Transportation and Land Use

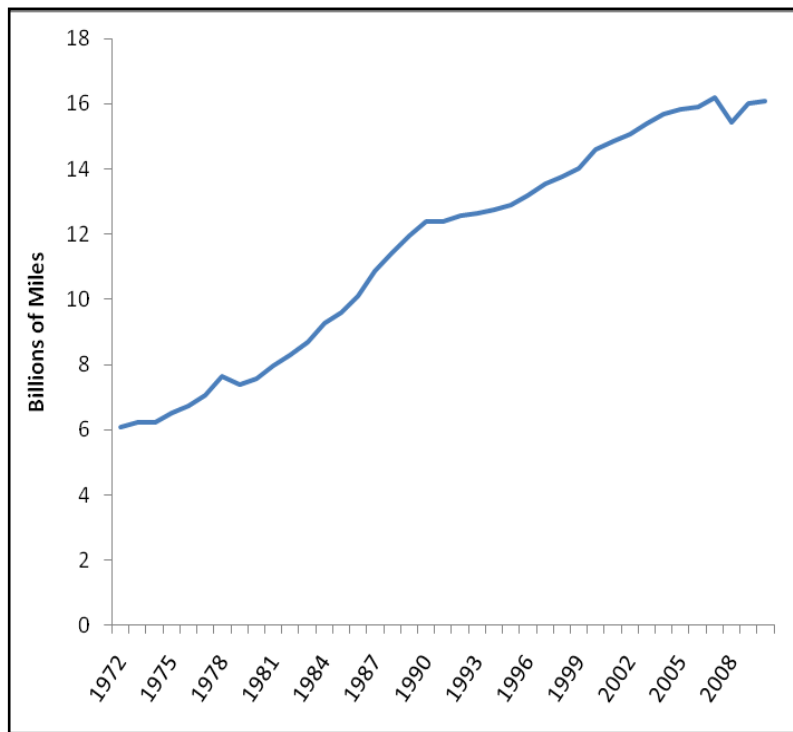


Thirty-nine percent of the California's GHG emissions stem from transportation²⁹ — the cars and trucks that move people and goods throughout the state. In Belmont, 60 percent of emissions stem from transportation. Travel on local roads and state highways represent 29% and 28% percent of transportation emissions respectively, with the remaining 3% coming from off-road equipment. Thus, reducing transportation emissions is a critical component of the climate action strategy. Reducing emissions from the transportation sector requires addressing three constituent components: reducing the carbon intensity of fuels, increasing vehicle efficiency, and reducing vehicle miles travelled (VMT). Fuel carbon intensity, defined as the amount of carbon per gallon, is addressed by the State of California's Low Carbon Fuel Standard, which mandates that a 10 percent overall reduction in the carbon intensity of transportation fuels (gasoline, diesel, natural gas, electricity, and so on) by 2020. Vehicle efficiency is addressed by AB 1493; California's Clean Cars Law of 2002 (AB 1493) requires carmakers to reduce global-warming emissions from new passenger cars and light trucks beginning in 2009. First in the world to reduce global-warming pollution from cars, this law has now been adopted by 11 other states. Affecting nearly one-third of the U.S. market, this law is projected to reduce global-warming emissions in 2020 by 64 million tons per year. However, addressing the third component, reducing VMT, is considerably more difficult than the previous two. Californians have driven more and more miles per year over the past five decades.

Figure 12 shows the growth in VMT from 1972 – 2010.

²⁹ Air Resources Board California Greenhouse Gas Emission Inventory – 2017 Edition
<https://www.arb.ca.gov/cc/inventory/data/data.htm>

Figure 12: California Growth in Vehicle Miles Travelled (VMT)
July of each year, 1972-2010



Data: California Department of Transportation

This growth in VMT is attributable in part to following factors:

- Growth in gross domestic product
- Lack of affordability in urban core housing causes people to live far away from where they work
- Lack of viable public transportation options
- Low cost of gasoline
- Sprawl development patterns such as bedroom communities separated from retail and commercial centers
- Streetscapes that discourage pedestrian or bicycle access

In order to reduce VMT and the associated GHG emissions, Governor Schwarzenegger signed Senate Bill 375 in 2008. SB 375 sets regional emissions targets and tasks regional planning organizations to recalibrate land use and transportation planning to meet those emissions targets. This climate action plan seeks to meet the SB 375 targets for the San Francisco Bay Area of 7 percent below 2005 levels by 2020 and 15 percent below 2005 levels by 2035.

The benefits of integrated planning and sustainable development go far beyond simply reducing the GHG emissions that contribute to climate change and its damaging effects. Communities that are well designed provide housing options for all income and age groups and are supported by a range of transportation options that will have many other advantages. Among these are increased mobility and transportation choices; reduced congestion; greater housing choices; improved public health as a result of better air and water quality; natural resource conservation; economic benefits, such as opportunities for neighborhood economic development and lower costs for community infrastructure; reduced dependence on foreign oil; and greater equity through the provision of improved access to jobs, housing, and everyday needs.

Belmont is fully committed to providing diverse transportation options that are convenient, safe, and affordable. More than that, Belmont supports grouping new homes, jobs, and services near existing transportation corridors.³⁰ Belmont's goal is for the majority of residents' needs to be met within a 20-minute walk within these corridors. Policies proposed in this climate action plan strive to maintain a quality of life that is environmentally and economically sustainable. These priorities and commitments are reflected and incorporated in this chapter on transportation and land use.

³⁰ See <http://lomaprieta.sierraclub.org/sustain/guidelines> for guidelines on how to integrate land use and mobility strategies to create complete communities.

3.2.1 **Goal: Reduce emissions from transportation through efficient land use, alternate modes of transportation, and operational innovations.**

Measure Category	Description of Measure	2020 GHG Reduction (MTCO ₂ e)	2035 GHG Reductions (MTCO ₂ e)
Transportation and Land Use	TL1 – Establish a Smart Growth Policy that prioritizes infill, higher density, transit-oriented and mixed-use development	709	1,064
Transportation and Land Use	TL2 – Remake urban landscape to ensure Complete Streets, with bike lanes, bike parking, traffic calming, beautification, etc. Continue to support Paper Trails and Safe Routes to School to encourage walking.	475	1,900
Transportation and Land Use	TL3 – Incentivize City Car Sharing Companies to open pods in town. Explore Bike Share program.	203	405
Transportation and Land Use	TM1 – Prioritize purchase of efficient vehicles and alternative fuel vehicles (including off-road equipment). Maintain existing vehicles for optimum mileage. Encourage staff to drive minimally and efficiently. Establish government operations idling policy.	5	14
Transportation and Land Use	TM2 – Establish alternative work schedules and telecommuting to reduce employee commute.	5	10
Transportation and Land Use	TM4 – Target purchase of new or conversion of existing government vehicles to more efficient vehicles.	11	39

Belmont has a history of supporting Smart Growth principles, identifying a “smart growth corridor” along El Camino Real in its 2013 Housing Element to promote mixed-use and higher-density development in transit-rich areas. The City also adopted a Complete Streets policy in January 2013 with the goal of designing all City streets for safe and convenient multi-modal travel. As a result of that policy, Belmont conducted the Ralston Avenue Corridor Study and Improvements Plan. The Plan was unanimously approved by Belmont City Council as a Corridor Context Sensitive Plan in August of 2014. The purpose of the study was to determine the adequacy of the corridor for multi-modal use including pedestrians, bicyclists, transit, and vehicles under existing and future conditions, and to develop context sensitive transportation alternatives to improve multi-modal use along the corridor. As of April 2015, Phase III of the project was authorized by City Council and includes the development of final alternatives, short term and long term capital improvement projects, associated budgets, and funding strategies.

In 2016, the City adopted the Comprehensive Pedestrian and Bicycle Plan. The goal of the Plan is to create a safe, comfortable and pedestrian friendly environment which will encourage people of all ages to bike or walk. Objectives in the plan including doubling the rate of walking

and bicycling, reducing pedestrian network gaps, providing bicycle facilities on most arterial and collector streets, providing pedestrian and bicycle crossing enhancements, increasing the provision of secure bicycle parking and reducing the number of pedestrian and bicycle collisions. The Alameda de las Pulgas/San Carlos Avenue Corridor Study and Transportation Improvements was also approved by Belmont City Council in 2016. The goal of the Study was to recommend solutions to various traffic concerns involving pedestrian, bicycle and vehicular circulation issue through the Alameda de las Pulgas/San Carlos Avenue corridor in the vicinity of Carlmont High School and Tierra Linda Middle School.

The City will also provide outreach for and work to implement community transportation programs, including Car and Bike Shares and Employee Commuter Benefits Programs, currently mandated by SB 1339, and municipal policies, including Low Emissions Vehicle Purchasing, Efficient Fleet and No Idling policies. Belmont currently offers alternative work schedules and will capture data on alternative work schedules and telecommuting annually in an employee commute survey for the Government Operations GHG emissions inventory. Currently, the City is required to develop and register an Employee Commute Benefit Program to be piloted beginning in 2014. If this program achieves quantifiable results, Belmont can choose to include it in a future Climate Action Plan update.

In addition to supporting the above initiatives, the City should work to support the adoption of electric vehicles, both in the city fleet and in the community. Electric vehicles provide a low-emissions form of private transportation and have the potential to significantly reduce emissions from the transportation sector. Expanding electric vehicle charging infrastructure and providing priority parking to electric vehicles are both effective ways of encouraging electric vehicle adoption.

3.3 Solid Waste



While it may not be immediately obvious, reducing the amount of waste deposited into the landfill through material reuse, reduction, and recycling is an important strategy Belmont residents can take to reduce GHG emissions. Some landfills capture as much methane as possible and combust it for electricity generation. However, for many landfills, much of the methane leaks to the atmosphere. This methane leakage is the primary source of Belmont's GHG emissions in the waste category.

To address the issues of escalating waste production, California AB 939 was passed in 1989 and mandated local jurisdictions to meet a solid waste diversion goal of 50 percent by the year 2000. Each jurisdiction was required to create an Integrated Waste Management Plan that looked at recycling programs, purchasing of recycled products and waste minimization. These plans form the foundation of the waste programs in place today.

Greenhouse gas emissions are also associated with product supply chains. Upstream from the consumer, fossil fuel energy is used to extract the raw materials, such as wood, metals, and so forth, from which products are made. Additional energy is needed to manufacture consumer goods in factories. Petroleum is used for the transportation of raw materials to the factory, moving manufactured goods to market, and moving waste from the consumer's curbside to landfills. These emissions do not show up in Belmont's inventory; however, as consumers, we each have a responsibility to support products that reduce waste and encourage manufacturers to design environmentally-friendly products.

Waste reduction and recycling are powerful tools for reducing emissions all along the consumer materials' lifecycle. Reducing the amount of materials required through re-use—for example using canvas bags instead of plastic and paper bags from the grocery store—represents the best opportunity to reduce GHG emissions in a significant way. There are regional efforts to ban single-use plastic bags and Styrofoam and local governments can support these efforts.



Recycling represents the second best opportunity to reduce GHG emissions. For these materials, recycling reduces energy-related carbon dioxide emissions in the manufacturing process and avoids emissions from waste management. The U.S. EPA estimates that if a city of 100,000 people with average waste generation (4.5 pounds/day per capita), recycling (30 percent), and baseline disposal in a landfill with no gas-collection system would increase its recycling rate to 40 percent, it would reduce emissions by more than 3,400 metric tons of CO₂e per year.

3.3.1 **Goal: Reduce solid waste generated and sent to landfills.**

Measure Category	Description of Measure	2020 GHG Reduction (MTCO ₂ e)	2035 GHG Reductions (MTCO ₂ e)
Solid Waste	WC1 – Increase participation in recycling programs and ensure weekly collection of recyclables and organic waste.	1,863	2,085
Solid Waste	WC2 – Mandate businesses recycle and provide staff or contractor to verify compliance (Support and enforce state law).	Supporting Measure	Supporting Measure
Solid Waste	WC4 – Increase diversion/recycling of yard waste by landscapers and landscape maintenance businesses and food scraps by residents and businesses. Explore a ban on these organics from landfill.	Supporting Measure	Supporting Measure

To provide support for the sustainable management of resources and landfill diversion, Belmont will strive to achieve a communitywide goal of 80 percent waste diversion by the year 2020 and 90 percent waste diversion by the year 2035. Achieving this goal will require coordination among public and private stakeholders. The City will continue to partner with its solid waste vendor to maintain, broaden, and increase participation in current composting, recycling, and solid waste management programs, as well as encouraging diversion rate increases through outreach, incentives, and fee structuring. The City also acknowledges that addressing cross contamination of waste stream (i.e. trash, recycling and compost) will be critical to achieving the waste diversion targets. Proper signage at waste receptacles can play a critical role in addressing this issue.

3.4 Adaptation

The climate is changing rapidly. According to the World Meteorological Organization, in their news release “2000-2009, The Warmest Decade.”³¹

The decade of the 2000s (2000–2009) was warmer than the decade spanning the 1990s (1990–1999), which in turn was warmer than the 1980s (1980–1989)... The 2000 – 2009 decade will be the warmest on record, with its average global surface temperature about 0.96 degree F above the 20th century average. This will easily surpass the 1990s value of 0.65 degree F.

Even if we stopped emitting GHGs tomorrow, the climate would still continue to change due to the length of the carbon cycle — the ability of the earth to absorb the excess carbon in the ocean and plants. Therefore, our communities must plan for adaptation to climate change.

Adaptation planning may be most effective at the state and regional levels, due to the scale of resources needed to develop and implement a coordinated plan. The 2009 California Climate Adaptation Strategy³² was developed to guide California’s efforts in adapting to climate change impacts. For more information on adaptation planning, see Appendix D.

³¹ WMO 2010. 2000–2009, THE WARMEST DECADE http://www.wmo.int/pages/mediacentre/press_releases/pr_869_en.html

³² <http://www.climatechange.ca.gov/adaptation/>



4 Implementation

The preceding chapters describe the principal sources of the City of Belmont GHG emissions and outline related goals and measures for achieving the community's targets of reducing emissions to 15% below 2005 levels by 2020 and 50% below 2005 levels by 2035. This chapter outlines the main components of the process for putting this plan into action and identifies specific actions from earlier chapters that are recommended for implementation.

Although significant GHG reduction policies and initiatives are already in place, the actions proposed in this Plan, by necessity, far surpass the scale of existing efforts. Implementing the Plan and ensuring that it results in real GHG emissions reductions will require increased coordination across sectors and institutionalized climate protection efforts across the community.

There are a large number of measures and programs that Belmont may implement to reduce GHG emissions. A cost-benefit analysis and prioritization methodology is presented below to assist the City in developing a phased implementation plan.

4.1 Prioritizing measures for action

C/CAG recommends approximately 40 measures to local jurisdictions in San Mateo County for effective and measurable greenhouse gas reduction. Belmont entered City-specific assumptions in the RICAPS spreadsheet tool, which then automatically calculated the costs, benefits, and GHG emission reductions associated with each measure, as well as scoring each measure using weighted cost, benefit, and feasibility factors. Each measure is scored on a scale of 1 (least favorable) to 5 (most favorable) based on benefits, costs, and feasibility. The results are shown below.

Table 8: Factors Influencing Measure Prioritization Scores

Score Category	Factors Influencing Score
Benefit Score	Emissions avoided, resource savings, government cost savings, community cost savings, & co-benefits.
Cost Score	Government capital costs, government annual operating costs, government staff time, community costs, & payback period.
Feasibility Score	Implementation time, anticipated community support/opposition, need for additional codes or ordinances, synergies with existing initiatives, & availability of outside funding.

Table 9: Measure Prioritization Scores

Emissions Category	Measure Name	Benefit Score	Cost Score	Feasibility Score	Total Score
All Sectors	Participate in County Green Business program	1.3	4.5	4.4	3.4
Energy (Community)	Commercial green building ordinance	1.9	3.3	2.4	2.5
Energy (Community)	Residential green building ordinance	3.0	3.5	2.2	2.9
Energy (Community)	Incentivize solar energy installation	3.0	3.3	2.4	2.9
Energy (Community)	Continue participation in Energy Upgrade Program and similar residential rebate/incentive programs as they become available and promote existing rebates (PG&E, State, Federal)	2.1	4.3	5.0	3.8
Energy (Community)	Promote PG&E commercial and industrial energy efficiency/demand response programs	2.4	4.3	5.0	3.9
Energy (Municipal)	Municipal green building policy	1.8	3.6	2.9	2.7
Energy (Municipal)	Environmentally preferred purchasing policy - Energy	1.5	4.7	3.8	3.3
Energy (Municipal)	Energy efficiency in municipal buildings	1.8	3.4	4.8	3.3
Energy (Municipal)	Energy efficient street lighting	2.1	3.7	4.6	3.5
Energy (Municipal)	Renewable energy installation on municipal property.	2.4	3.8	4.2	3.5
Transportation (Municipal)	Efficient fleet policy	1.5	3.9	4.0	3.1
Transportation (Municipal)	Flexible schedules	1.5	4.3	3.8	3.2
Transportation (Municipal)	Adoption of low emission government vehicles	1.9	4.1	4.0	3.3
Transportation and Land Use	Smart growth development	2.6	2.7	2.0	2.4
Transportation and Land Use	Walkable/bikeable street landscape	3.6	2.3	2.4	2.8
Transportation and Land Use	Bike and car sharing	2.4	3.7	3.6	3.2
Waste (Community)	Set higher diversion rate goal.	4.0	3.8	3.2	3.7
Waste (Community)	Commercial recycling ordinance	4.0	3.8	3.2	3.7
Waste (Community)	Yard Waste Ordinance	4.0	3.8	3.2	3.7
Water	Water conservation ordinance	2.6	4.1	3.4	3.4
Water	Water conservation incentives	3.0	4.5	4.8	4.1

4.2 Results of measure prioritization

Twenty-three (23) measures were chosen for this CAP to 2035, some of which have been initiated since the baseline year and others are to be phased in over time based on City priorities, staff time, and funding availability. An additional measure, Community Choice Aggregation, was added to meet the CAP goal for 2035. The 11 measures that are currently in progress include:

- EC1 – Commercial Green Building Ordinance
- EC2 – Residential Green Building Ordinance
- EC3 – Incentivize Solar Energy Installation
- EC6 – Continue to be Part of Peninsula Clean Energy
- EM1 – Energy Efficient Street Lighting
- EM2 – Environmentally Preferred Purchasing Policy
- EM3 – Municipal Green Building Policy
- EM5 – Energy Efficiency in Municipal Facilities
- TL1 – Smart Growth Development
- TL2 – Walkable/Bikeable Streetscapes
- WC4 - Yard Waste Ordinance

Seven additional measures have been selected as near-term actions to begin active implementation in 2017:

- EC4 – Energy Upgrade Program
- EC5 – Promote Commercial and Industrial Energy Efficiency and Demand Response
- EW2 – Water Conservation Incentives
- EW1 – Water Conservation Ordinance (BAWSCA)
- TM2 – Flexible Schedules
- WC1 – Set Higher Diversion Rate
- WC2 – Commercial Recycling Ordinance

Five additional measures have been selected as mid-term actions to begin active implementation by 2018:

- A1 – County Green Business Program
- EM4 – Renewable Energy Installations on Municipal Property
- TM1 – Efficient Fleet Policy
- TM4 – Adopt Low Emission Fleet Vehicles
- TL3 – Car and Bike Sharing Programs

4.3 Summary of Measures

A summary of all the emission reduction in measures is provided in Table 10 below.

Table 10: Summary of Measures

Measure Category	Description of Measure	2020 Emission Reduction (MTCO ₂ e)	2035 Emission Reduction (MTCO ₂ e)	In Progress/Short-Term/ Medium-Term
Energy	EC1 – Adopt CALGreen for non-residential buildings triennially. Work to mandate achievement of CALGreen Tier 1 energy performance.	122	293	In Progress
Energy	EC2 – Update CALGreen for residential buildings triennially. Work to mandate achievement of CALGreen Tier 1 energy performance.	643	643	In Progress
Energy	EC3 – Provide financial incentives for solar PV and hot water system installation.	270	776	In Progress
Energy	EC4 – Provide or encourage residential energy audits and retrofits. Leverage existing rebates/add additional rebates for energy efficient retrofits.	101	290	Short-Term
Energy	EC5 – Promote and assist with marketing and outreach for PG&E energy efficiency and demand response programs for the nonresidential sector. Leverage existing rebates/add additional rebates for energy efficient retrofits.	175	503	Short-Term
Energy	EC6 – Continue to be part of the Peninsula Clean Energy (PCE) Community Choice Aggregation (CCA) Program and continue to opt for the ECO100 option (100% renewable energy) for all City facilities.	See Footnote ³³	8,132	In Progress
Energy	EM1 – Replace street, signal lights, parks and parking lot lighting with efficient lighting (LEDs, induction, etc.).	45	45	In Progress
Energy	EM2 – Implement a sustainable purchasing policy that emphasizes recycled materials and Energy Star equipment.	5	5	In Progress
Energy	EM3 – Work to mandate all new municipal buildings achievement of CALGreen Tier 1 energy performance.	11	31	In Progress
Energy	EM4 – Complete feasibility studies on the installation of solar or other renewable energy projects at City facilities and install where feasible. Set a goal for renewable energy purchase if installation is not viable.	65	187	Short-Term
Energy	EM5 – Participate in San Mateo County Energy Watch and leveraged benchmarking to identify EE audit and retrofit projects and track energy performance.	22	63	In Progress

³³ Avoided emissions in 2020 from Belmont's participation in PCE have not been included in this version of the CAP. However, Belmont's decision to purchase ECO100 electricity for all municipal operations will result in a 100% reduction in municipal operations electricity emissions, an estimated 331 MT CO₂e decrease in emissions in 2020.

Measure Category	Description of Measure	2020 Emission Reductions (MTCO _{2e})	2035 Emission Reductions (MTCO _{2e})	In Progress/Short-Term/Medium-Term
Energy	EW1 – Promote existing and/or new rebates for water efficient appliances and fixtures.	501	794	Short-Term
Energy	EW2 – Adopt Bay Area Water Supply and Conservation Agency (BAWSCA) Ordinances or triennial CALGreen codes that apply to water.	501	1,190	Short-Term
Transportation and Land Use	TL1 – Establish a Smart Growth Policy that prioritizes infill, higher density, transportation oriented and mixed use development	709	1,064	In Progress
Transportation and Land Use	TL2 – Remake urban landscape to ensure Complete Streets, with bike lanes, bike parking, traffic calming, beautification, etc. Continue to support Paper Trails and Safe Routes to School to encourage walking.	475	1,900	In Progress
Transportation and Land Use	TL3 – Incentivize City Car Sharing Companies to open pods in town. Explore Bike Share program.	203	405	Medium-Term
Transportation and Land Use	TM1 – Prioritize purchase of efficient vehicles and alternative fuel vehicles (including off-road equipment). Maintain existing vehicles for optimum mileage. Encourage staff to drive minimally and efficiently. Establish government operations idling policy.	5	14	Short-Term
Transportation and Land Use	TM2 – Establish alternative work schedules to reduce employee commute.	5	10	Short-Term
Transportation and Land Use	TM4 – Target purchase or lease of new or conversion of existing government vehicles to more efficient vehicles.	11	39	Short-Term
Solid Waste	WC1 – Increase participation in recycling programs and ensure weekly collection of recyclables and organic waste.	1,863	2,885	Short-Term
Solid Waste	WC2 – Mandate businesses recycle and provide staff or contractor to verify compliance.	Supporting Measure	Supporting Measure	Short-Term
Solid Waste	WC4 – Increase diversion/recycling of yard waste by landscapers and landscape maintenance businesses and food scraps by residents and businesses. Explore a ban on these organics from landfill.	Supporting Measure	Supporting Measure	In Progress
All Sectors	A1 – Establish voluntary program that allows businesses to brand themselves as green by following sustainable practices.	7	20	Medium-Term

4.4 Meeting the emission targets

The measures described in this Climate Action Plan, combined with the State and County legislation and initiatives, will enable the City of Belmont to meet its emissions reduction target of 15 percent below 2005 levels by 2020 and 50% below 2005 levels by 2035.

Table 11 below shows the contribution of the three major statewide emissions reduction initiatives, the County Transportation CAP, state petroleum reduction and Zero Net Energy goals for 2030, and the City's CAP measures. Based on the inventory and forecast, the City of Belmont needs to achieve 30,076 MTCO₂e of emissions reductions to meet its 2020 goal and 115,471 MTCO₂e to meet its 2035 goal. The estimated reductions described and accounted for in this Plan, including those from State and County measures, equal 51,831 MTCO₂e by 2020 and 115,550 MTCO₂e by 2035, exceeding the minimum reductions required to meet the City's target.

Table 11: Meeting the 2020 and 2035 Targets

State Initiative	Sector	% Emissions reduction from applicable sector in 2020	2020 Reduction in City's emissions (MT CO ₂ e)	% Emissions reduction from applicable sector in 2035	2035 Reduction in City emissions (MT CO ₂ e)
AB 1493 (Pavley)	Transportation	19.7%	19,623	19.7%	24,136
LCFS	Transportation	7.2%	7,172	7.2%	8,821
33% RPS	Electricity (Energy)	21%	4,160	34%	9,177
County TCAP	Transportation	12%	11,953	12%	14,702
50% Petroleum reduction (2030)	Transportation	0%	0	11.1%	13,599
100% ZNE New Residential (2020)	Residential	0%	0	27%	12,004
100% ZNE New Commercial (2030)	Commercial	0%	0	9%	2,324
50% ZNE Existing Commercial (2030)	Commercial	0%	0	41%	10,588
A. Total Statewide Initiative Emissions Reductions			42,908		95,351
B. Total City Climate Action Plan Reductions Measures			5,736		19,290
C. Total Expected Emissions Reductions by 2020 /(A+B)			48,644		114,641
D. City of Belmont Emissions Reduction Requirement for 2020			22,512		112,598
E. Meets/exceeds state goals? (C > D)			Yes		Yes

4.5 Management of GHG Reduction Strategy

Support will be needed to direct the implementation of the Plan measures. This section details how the city will endeavor to put this plan into action.

- **Consider staffing resource enhancements to facilitate sustainability coordination**
 - The City will endeavor to hire, resource, or dedicate staff to act as a sustainability coordinator to take primary responsibility for implementation of this CAP. If sufficient city funds are unavailable, existing staff members may be tasked to take on this role. Based on the analysis of measures, it would require approximately 3.5 full-time employees to fully implement all measures in this CAP. For some of these measures, there may be city staff who already dedicate their time to similar efforts.
- **Maintain associations and partnerships that assist the City in implementing the CAP** – The City will maintain existing associations and partnerships with agencies and organizations - including C/CAG, San Mateo County Energy Watch, Energy Upgrade California, Joint Venture: Silicon Valley Network, PG&E's Sustainable Communities Team, Silicon Valley Leadership Group, Sustainable San Mateo County, and Sustainable Silicon Valley – that can assist with funding and outreach for, monitoring and reporting on, and evaluating and updating CAP measures.

4.6 Public Participation and Community Engagement

The City can play a substantial role in generating awareness and educating residents about ways to reduce emissions. While the City can help initiate a movement that emphasizes sustainable practices, it is crucial that other members of the community, such as residents and businesses, are engaged in the process in order to achieve the reduction targets mentioned in this plan while minimizing costs. The target will only be achieved by building a movement that achieves sustained action and coordination across all stakeholders and sectors.

As mentioned previously, there are significant opportunities for the City to leverage existing programs funded by the State of California, PG&E, and others to support community efforts to improve energy efficiency, install renewable energy technologies, facilitate transit/biking/walking initiatives, and support households and businesses in taking other actions. The City of Belmont seeks to distribute information more widely on funding opportunities for residents and local businesses. Actions may include more information posted on the City website and marketing materials posted at key locations, including City Hall and libraries. Additional actions may include partnering with PCE and PG&E and local water districts to further develop marketing presentations and workshops for the community.

Specific actions that community members can take today are included in Appendix B of this climate action plan. Funding opportunities are listed in Appendix C.

4.7 Timeline

The following timeline lists the major milestones in the climate action plan implementation process. Progress and updates to this schedule should be submitted to City Council and the public as part of an annual Plan Implementation Report.

Table 12. Climate Action Plan Implementation

Milestone	Target Date
GHG Inventories Completed	[2009-2012]
GHG Reduction Target Established	[October 2013]
Draft CAP Published	June 2017
Community Comment Period	July/August/September 2017
Draft and Final EIR w/GP+BVSP	2017, Q3/Q4
Council Review	[Q3/Q4 2017] – synchronize w/GP+BVSP
CAP Adoption	[Q3/Q4 2017] – synchronize w/GP+BVSP
Begin CAP Implementation	[2017] – synchronize w/GP+BVSP
1st Annual CAP Implementation Report	[November 2018]
Community Comment Period	[November/December 2018]
1st CAP Update	[December 2019]



5 Monitoring and Improvement

Monitoring progress is a critical component to ensure that the emissions targets are met. Should monitoring efforts find that the Climate Action Plan is falling short of its goals, the City will add additional voluntary and mandatory measures to the Plan in order to meet the Plan's GHG reduction target. Ongoing monitoring is critical in order to demonstrate that the Plan is achieving its goals, thereby maintaining its status as a GHG Reduction Strategy over time. The implementation and monitoring of the Plan will be critical to the ability of subsequent projects to tier their GHG analysis under CEQA.

The following describes the monitoring and improvement program.

- Every year, a Sustainability Coordinator will issue an Annual Climate Action Plan Implementation Report to update the City Council, residents, and other interested stakeholders as to the progress implementing the Plan measures. The annual implementation report will detail lessons learned and make recommendations for changes to the implementation strategy or the Plan itself. Following the release of the report, a 30-day public comment period will be open to allow for community input on the implementation of the Plan.
- The Sustainability Coordinator will track the emissions, resource savings, and any other effects of each implemented measure as well as estimate costs to government, residences, and businesses. Each measure will be summarized in the annual implementation report and made available for public review.
- A full GHG inventory will be conducted every 3 to 5 years according to the ICLEI community emissions protocol. The inventory will allow the city to understand how emissions levels are tracking in a top-down manner. PG&E can provide annual updates on electricity and natural gas usage to track associated GHG emissions.
- This Plan may need to be updated based on the results of the GHG inventory. Belmont may modify and/or add new measures to ensure that the city is on track to meeting its greenhouse gas reduction goals.

6 Conclusion



Climate change is a global problem and only through local solutions designed to meet the needs of our community can we mitigate and adapt to its impacts and protect the environment. While the challenge of climate change is unprecedented, local-level solutions can reduce emissions, increase efficiency, promote economic development, and improve quality of life for residents.

Together, we can conserve our scarce resources, thereby saving our families and companies money, increasing the resilience of our economy and emergence of new markets that prioritize green technologies. The City of Belmont has taken a significant step toward a more sustainable future with this climate action plan. This Plan has identified areas and opportunities to reduce GHG emissions within the community and City operations that along with statewide efforts can achieve our environmental goals. The City of Belmont is poised to reap the benefits of a clean energy economy, with policies that can increase the demand for local green jobs.

These are difficult issues. As you can see, when reviewing this Plan, the proposed efforts of Belmont are small when compared to the collective action of our citizenry. What can a single individual do? Appendix B provides 10 ways that individuals can reduce their GHG footprint and help safeguard our environment for future generations.

While an important first step, this plan will remain a living document, to be updated as technology and policies progress, to support the City's efforts to manage GHG emissions for a sustainable future for all.

Appendix A. Glossary of Terms

AB32	The California Global Warming Solutions Act of 2006
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
CAP	climate action plan
CAPPA	Climate and Air Pollution Planning Assistant
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
EIR	environmental impact review
GHG	greenhouse gas
ICLEI	Local Governments for Sustainability
kWh	kilowatt hour
MFD	multifamily dwelling
MPO	metropolitan planning organization
MT	metric ton
PACE	property-assessed clean energy
PG&E	Pacific Gas and Electric Company
ppm	parts per million
PV	photovoltaic
RPS	renewable portfolio standard
U.S. EPA	United States Environmental Protection Agency
TOD	Transit-oriented development

Appendix B. 10 Steps to Reduce Your Carbon Footprint

Modified from CoolClimate.org

1. Change your commute

Did you know that one third of the CO₂ produced in the U.S. is from the transportation of people or goods? Pick one day a week to walk, bike, take public transportation or carpool to work or when you are running errands. Silicon Valley Bicycle Coalition (<http://bikesiliconvalley.org/>) has great resources and can help you plan your bike commute. Another resource for planning trips via public transportation is 511.org. If possible, live close to your workplace and talk to your employer about working from home or subsidizing the costs of public transportation. When driving, remember to combine several car trips into one trip and avoid idling. Additionally, you can get better fuel efficiency by following the speed limit. Exceeding the speed limit by just 5 mph during highway travel results in an average fuel economy loss of 6 percent.

2. Be a better consumer

Did you know that the average American generates about 4.4 lbs. of trash each day? To reduce the amount of trash you generate, follow these few easy steps. Use re-usable coffee mugs and shopping bags. If you forget your mug or bag at the store, buy a new reusable mug or bag and keep the extra one in your purse or car for use the next time you are out. Alternatively, set aside \$1 each time you forget your mug or bag; depending on your memory, you will have enough funds to purchase a reusable item sooner or later. Also, reuse as many things as possible and recycle at home, work, and school. Compost pick-up is now available in more parts of San Mateo County.

3. Shop local

The shorter the distance your food travels to your plate or that product travels to your home, the fewer greenhouse gases are produced. Declare one day a week to be a "buy local day" and eat foods produced within 50 miles of your house. Participate in community-supported agriculture and community-supported fishery programs and shop at farmers markets.

Buy produce and fish labeled "As Fresh As It Gets," signifying that it was grown or harvested in San Mateo County. Support restaurants and businesses accredited by the "As Fresh As It Gets" campaign, signifying that they use county-grown produce, fish, and other products. For a list of in-season produce and fish, farmers market locations, and accredited businesses and restaurants, visit www.asfreshasitgets.com.

4. Dry-up Household Water Consumption

Did you know that water-related energy use consumes 19 percent of California's electricity, 30 percent of its natural gas, and 88 billion gallons of diesel fuel every year? To reduce your water consumption at home, turn off your water when it's not being used, take shorter showers, stop unseen leaks by reading your meter, install low-flow shower heads and aerators on your faucet, install and use water-efficient landscaping and irrigation methods (for example, plant drought tolerant plants and/or install permeable surfaces and drip irrigation systems), and use EnergyStar appliances. The Bay-Friendly Gardening Program (<http://www.stopwaste.org/>) provides resources for selecting plants, conserving water and fostering soil health.

5. Unplug it

Did you know that appliances, chargers, home theater equipment, stereos, and televisions use electricity even when their power is off? Eliminating this "leaking" electricity could save you 6–26 percent on your average monthly electricity bill. Take a walking tour of your home, unplug seldom-used appliances, and install power strips so that the power to frequently used items can be easily turned off.

6. Change the lights

Replace any incandescent light bulbs that remain in your home with compact fluorescent lights (CFLs). Replacing one incandescent light bulb with a CFL can save \$30 or more in electricity costs over the bulb's lifespan.

7. Set your Thermostat for the Season

Set your thermostat in winter to 68° or less during the daytime, and 55° before going to sleep (or when you are away for the day), to save 5 to 20 percent of your space-heating costs. During the summer, set thermostats to 78° degrees or more to save 5 to 20 percent of your cooling costs. For an easy fix, purchase an inexpensive programmable thermostat that makes these changes for you.

8. Increase Energy Efficiency at Home

Did you know that you can save up to 350 pounds of CO₂ and \$150 per year at home by simply keeping air filters clean? To determine more ways to increase energy efficiency, take advantage of subsidized home energy audits offered through Energy Upgrade California. When you are ready to purchase an appliance, ensure that you purchase an EnergyStar appliance. To reduce carbon emissions associated with energy use, install or purchase alternative energy for your electricity needs.

9. Stop Unwanted Services

Did you know that junk mail production in the U.S. consumes as much energy as 2.8 million cars? Stop your junk mail at www.directmail.com/junk_mail. Stop unwanted catalogs at www.catalogchoice.org .

10. Get your friends and families to reduce their carbon emissions

Appendix C. Summary of Funding Sources

For implementation of the Climate action plan, Belmont must evaluate strategies for financing climate protection actions and provide adequate, reliable, and consistent long-term program funding. This appendix provides an overview of available funding sources to help determine appropriate potential program funding sources and funding levels to support existing and new programs outlined in this plan. Other funding sources may be available that are not listed here.

Federal Funding

Federal Transportation Investment Generating Economic Recovery (TIGER) Grant

<https://www.transportation.gov/tiger>.

The Federal Transportation Investment Generating Economic Recovery (TIGER) grant program was created by the American Investment and Recovery Act (ARRA) of 2009. In 2016, U.S. Transportation Secretary Anthony Foxx announced that nearly \$500 million will be made available for transportation projects across the country in the eighth round of the highly successful TIGER grant program. Cities can apply for a TIGER grant to fund parking garages, and infrastructure to support electric battery-swap station and parking for electric vehicles.

State Funding

Energy Conservation Assistance Act (ECAA) Program Loans

<http://www.energy.ca.gov/efficiency/financing/index.html>

Since 1979, more than \$399 million has been allocated to more than 850 recipients through ECAA Program Loans. The program offers loans with a one percent interest rate to finance energy efficiency improvements. The maximum loan amount is \$3 million per application. Eligible projects include lighting system upgrades, pumps and motors, streetlights and LED traffic signals, energy management systems and equipment controls, building insulation, energy generating including renewable and combined heat and power projects, HVAC equipment, water and waste water treatment equipment and load shifting projects.

Energy Upgrade California

<https://energyupgradeca.org>

The Energy Upgrade California program helps residential and commercial consumers and the building industry to access available rebate programs and financing options for energy efficiency and renewable energy projects. It is supported by an alliance of the California Public Utilities

Commissions, the California Energy Commissions, utilities, regional energy networks, local governments, businesses and nonprofits. Funding comes from investor-owned utility customers under the auspices of the California Public Utilities Commission.

Utility Rebate Programs

Pacific Gas and Electric (PG&E) offers a full suite of energy efficiency rebates programs to support its customers in saving energy and money.

- Rebates for households: https://www.pge.com/en_US/residential/save-energy-money/savings-solutions-and-rebates/rebates-by-product/rebates-by-product.page?
- Rebates for businesses: https://www.pge.com/en_US/business/save-energy-money/business-solutions-and-rebates/product-rebates/product-rebates.page

Below, we provide some specific examples of PG&E programs available to the community.

PG&E San Mateo County Energy Watch Program

<http://www.smcenergywatch.com>

San Mateo County Energy Watch provides energy efficiency services and retrofits and assists businesses and moderately low-income households to identify cost-effective projects. The program's services include energy audits, special rebates and incentives

PG&E Residential Appliance Rebates

<http://www.pge.com/myhome/saveenergymoney/rebates/appliance/>

PG&E offers rebates to customers who purchase qualifying energy efficient appliances, including clothes washer, gas storage water heaters, electric heat pump water heaters and variable speed pool pumps/motors.

PG&E LED Streetlight Replacement Program

<http://www.pge.com/mybusiness/energysavingsrebates/rebatesincentives/ref/lighting/lightemittingdiodes/incentives/index.shtml>

Belmont may be eligible for PG&E's LED streetlight replacement program which provides rebates to cities that replace existing streetlights with more energy efficient LED fixtures (up to \$125 per fixture). More information on this program is available at

PG&E Commercial Appliance Rebates

<http://www.pge.com/en/mybusiness/save/rebates/erebates/index.page>

PG&E offers rebates to business customers on hundreds of products including refrigeration units, lighting fixtures, heating systems, food service appliances, boilers and water heaters, and

insulation. More information and a complete list of products eligible for rebates is available online at

PG&E Home Energy Efficiency Improvements Rebates

<http://www.pge.com/myhome/saveenergymoney/rebates/remodeling/>

PG&E offers rebates to customers who make energy efficiency improvements when remodeling their homes. Currently PG&E offers a rebate of up to \$0.20 per square foot for cool roof installations and \$0.15 per square foot of attic and wall installation installed. Additionally, PG&E has rebates for homeowners who upgrade their home's heating and cooling systems. Rebates are available for installing energy efficient furnaces (up to \$300), air conditioning units (up to \$50) and whole house fans (up to \$100). Finally, PG&E will provide up to \$400 in rebates to customers who test and seal their home's duct system. More information on this program is available at

Local Energy Programs

California Youth Energy Services

<http://www.risingsunenergy.org>

Since 2000, Rising Sun Energy Center has run CYES, a summer youth employment and community efficiency retrofit program in the Bay Area. CYES hires young people (ages 15-22) and trains them to become Energy Specialists, serving their communities with a FREE Green House Call. Energy Specialists install free energy and water saving devices, and provide personalized recommendations and education for further savings in homes. CYES provides services to all community members regardless of income. However, it was designed to serve hard-to-reach residents including renters, non-English speaking households, and low-moderate income households. It provides youth with opportunities for training and meaningful employment; which are often not adequately available to them. CYES youth receive employability skills training, paid summer employment, and the foundation for a green career.

Green@Home House Calls

<http://www.acterra.org/programs/greenathome/index.html>

Green@Home House Calls help fight climate change by saving residents energy, money and CO2. Trained volunteers meet with residents in their homes to install simple energy-saving devices and create home energy conservation plans. Volunteers demonstrate environmentally friendly choices and foster a deeper awareness of the need for change. House Calls are available to all residents of participating cities whether you rent or own.

Other Funding Opportunities

American Forests Global ReLeaf Grant Program

<http://www.americanforests.org/discover-american-forests/our-work/>

American Forests is a non-profit organization founded in 1875 that promotes forest conservation. American Forest's Global ReLeaf Program provides grants to fund tree-planting projects in urban and natural areas.

California ReLeaf Urban Forestry Grant Program

<http://californiareleaf.org/programs/grants>

The California ReLeaf Urban Forestry grant program provides funding to assist nonprofit and community-based groups throughout California with urban forestry projects. The program is funded through a contract with the California Department of Forestry and Fire Protection (CAL FIRE).

Large Landscape Audit

<http://bawsca.org/conserve/programs/audits>

BAWSCA and its participating member agencies offer this audit program to select large landscapes within the service area free of charge. This program includes the development and monthly distribution of landscape water budgets for selected accounts and actual large landscape surveys to assess landscape watering needs. A key component of the program is ongoing monitoring/tracking of actual water use and estimated water savings for the sites surveyed. If you have water conservation related questions, please call 650-349-3000 or send an email to bawsca@bawsca.org. You can also check with your local water company; some offer water audits for no charge.

Waste Audits by Recology

<https://www.recology.com/index.php/commercial-beyond-the-cart/84-commercial>

Recology offers a free waste audit to its business customers. A Waste Zero Specialist will come to your facility to advise you on the size/type of bins you could use and make other recommendations to help you reduce the amount of waste generated. To make an appointment, call (650) 595-3900.

Appendix D. Adaptation Planning for Climate Impacts

Effective adaptation planning and management entails dealing with uncertainty. It is a long-term process that should allow immediate action when necessary and adjust to changing conditions and new knowledge. Belmont plans to initiate an inclusive planning process that ensures the resulting actions are feasible and widely accepted. Adaptation will likely be an ongoing process of planning, prioritization and specific project implementation.

Five important steps to effective adaptation planning are summarized below:

1. Increase Public Awareness; Engage and Educate the Community

It is critical that the public understand the magnitude of the challenge and why action is needed. The planning process should be inclusive of all stakeholders. Local outreach campaigns are needed to promote awareness of the dangers of heat exposure and recommend low-cost and low-GHG adaptation strategies. These efforts should leverage similar efforts undertaken at the regional, state, and federal levels.

2. Assess Vulnerability

Understanding vulnerability to sea level rise and other climate change impacts is critical to developing adaptation effective strategies. A detailed vulnerability analysis should be performed to assess potential climate change impacts to infrastructure and natural systems. Future vulnerability of assets and infrastructure can then be assessed using conceptual models of shore response to sea level rise. Shore response models can be applied for one or more climate change scenarios and planning horizons, and a strategy for adapting can be developed with due consideration to priorities and time frames. Both short-term and long-term adaptation strategies should be identified. Level of risk can be categorized in terms of likelihood of damage within the forecasting period and the severity of the damages. This allows planners to prioritize their response to sea level rise. The vulnerability assessment can also provide a framework for agency and community education and participation, feed into other planning documents, and identify funding needs.

3. Establish Goals, Criteria and Planning Principles

Engage with stakeholders to establish planning priorities, determine decision criteria, and build community support for taking action. Rank physical and natural assets for preservation efforts. Where possible, look for situations where a mitigation action has

adaptation co-benefits (e.g., planting trees to reduce urban heat islands while sequestering carbon and providing habitat).

4. Develop Adaptation Plan

Identify specific strategies, develop actions and cost estimates, and prioritize actions to increase local resilience of City infrastructure and critical assets, including natural systems like wetlands and urban forests. Look for synergies between natural processes and engineering solutions. There is a continuum of strategies available to manage sea level rise, ranging from coastal armoring (levees, seawalls, etc.) to elevated development to a managed retreat or abandonment of low-lying development. An adaptation plan should include a prioritized list of actions (e.g. projects) with a timeline, capital expenditure plan, and framework for monitoring and adaptive management.

5. Ongoing Monitoring and Adaptive Management

Reassess climate change vulnerabilities on a regular basis and modify actions accordingly. This includes monitoring the effectiveness of current policies, strategies and actions, and keeping up with changing science, funding opportunities, and regulatory actions.

A menu of potential adaptation strategies and measures is provided in Table 13 below.

Table 13. Adaptation Strategies and Measures

Climate Change Impacts	Sample Adaptation Measures
Sea Level Rise Risks to existing facilities, natural systems, private property and public infrastructure	<ul style="list-style-type: none"> • Educate and engage the community on the need for long-range planning • Partner or collaborate with other jurisdictions and agencies to increase awareness and build community support for action • Identify funding mechanisms and seek public-private partnerships where interests converge • Use natural backshore wave-buffering processes to reduce wave erosion and run-up on levees • Increase or maintain the buffering capacity of tidal wetlands to protect against storm surges and keep pace with sea-level rise • Move levees further inland to allow marshes and mudflats to naturally transgress landward • Protect and restore wetlands that provide vital habitat and carbon storage, and allow for landward migration of habitat over time • Make modifications to low-lying wastewater treatment facilities. Consider opportunities for integrating wastewater treatments and wetlands • Avoid new development in areas at risk based on sea level projections

	<ul style="list-style-type: none"> Do coastal armoring with levees and seawalls to protect vital infrastructure from erosion, inundation, and flooding
Extreme Heat Events Risks to public health and infrastructure	<ul style="list-style-type: none"> Identify vulnerable communities and develop emergency preparedness plan Establish cooling centers, especially for vulnerable populations Reduce urban heat islands through use of cool roofs and other reflective surfaces Do targeted tree planting and enact new requirements for shading in new parking lots and other large paved areas Reduce risk of wildfires through fuels reduction in the urban-wild land interface
Regional Drought Risks to reliable water supply, and potential conflicts between urban and agriculture users	<ul style="list-style-type: none"> Increase capacity for community water storage Promote local water conservation Make water conservation a top priority for agriculture in the region Do water reclamation and reuse projects
Increased Flooding and Severe Weather Events Risks to public health, private property, public infrastructure, and ecosystems	<ul style="list-style-type: none"> Integrate local flood management plans with adaptation planning Identify vulnerable communities and develop emergency preparedness plans Establish local land use policies that decrease flood risk; avoid building in high-risk areas Make modifications to storm water system routing and storage. Develop storage areas for peak flows Maximize use of bioswales and permeable surfaces in both greenscape and hardscape areas to improve aquifer recharge and mitigate flooding from stormwater
Air Quality and Other Public Health Concerns	<ul style="list-style-type: none"> Restrict use of fireplaces and open fires on high-risk days Monitor potential threats to public health, including new diseases, and develop public awareness
Threats to Species, Ecosystems, and Ecosystem Services	<ul style="list-style-type: none"> Design urban forest program to improve biodiversity, provide heat relief, and sequester carbon Preserve wetlands, salt marshes, and other critical coastal habitats
Risks to Local Agriculture and Food Supply	<ul style="list-style-type: none"> Promote conservation of local agricultural land Promote the use of public and private land and rooftops for producing food Promote the planting of fruit and nut trees Support local farmers markets by providing incentives such as reduced costs for permits and support in attaining electronic benefit transfer (EBT) point-of-sale terminals Provide incentives and remove regulatory obstacles to encourage animal husbandry and local food production and distribution Provide and promote educational opportunities for residents at all levels of the educational system (preschool through college) to gain skills in organic gardening; fruit production; animal husbandry; food preservation and cooking; and affordable, healthy eating Develop a city-run or city-supported food gleaning program that organizes volunteers or compensates workers to collect food from trees and shrubs on land owned by cities or within

	<p>cities to distribute through food banks and other local distribution channels</p> <ul style="list-style-type: none"> • Reduce food waste by implementing a local composting where all food scraps, food-soiled paper, waxed cardboard, wood crates and landscape trimmings from markets, restaurants, homes, hotels, and schools, would be collected and made available for distribution to rural or urban gardeners
--	--

Appendix E. Future Opportunities for Emissions Reductions

This section identifies and describes an additional 10 measures that can be explored and initiated by the City of Belmont as funding and resources become available and as the measures in the current Climate Action Plan are implemented or completed.

Measure Category	Description of Measure
Energy	EC7 – Establish revolving funds to finance energy-efficiency retrofits at residences.
Energy	EC8 – Establish revolving funds to finance energy-efficiency retrofits at businesses.
Energy	EM6 – Establish revolving funds to finance energy-efficiency retrofits at public buildings.
Energy	EM7– Offset city GHG emissions from electricity and natural gas.
Transportation and Land Use	TL4 – Establish parking policies to increase use of walking, public transit and bicycling.
Transportation and Land Use	TL5 – Set up in planning review that new or redeveloped commercial sites establish "plug in" parking preferred spaces.
Transportation and Land Use	TM3 – Implement a Public Employee Commuting Program, establishing a commute alternatives program to promote and incentivize public transportation, carpooling, biking, etc.
Solid Waste	WC3 – Create a Sustainable Vendor Policy at Public Events, requiring recycling of cardboard, paper, containers and food/organics. Require compostable/recyclable silverware and food take out packaging.
Solid Waste	WM1 – Implement an Environmentally Preferred Purchasing (EPP) Policy, a sustainable purchasing policy that emphasizes recycled materials.
Solid Waste	WM2 – Establish a municipal zero waste policy, a government policy to achieve 95% diversion in city operations by 2020.

Appendix F. Baseline GHG Inventory and Forecast

Table 14: Historic Emissions and Business-as-usual Emissions Projections by Sector

Sector	2005 Emissions (MT CO ₂ e)	2013 Emissions (MT CO ₂ e)	Annual growth rate: 2013-->2020	2020 Emissions (MT CO ₂ e)	Annual growth rate: 2013-->2035	2035 Emissions (MT CO ₂ e)
Residential	42,134	38,778	0.65%	40,584	0.62%	44,457
Commercial/Industrial	21,052	19,730	1.34%	21,208	1.23%	25,825
Transportation*	100,554	97,490	1.04%	99,608	1.04%	122,515
Generated Waste & Wastewater	3,908	2,742	0.83%	3,191	0.78%	3,254
Water	0	311	0.83%	421	0.78%	369
TOTAL	167,648	159,051	0.49%	165,013	1.12%	196,422

Table 15: Emissions Forecast Inputs

Sector	Year	Data	Data Source
Residential (Population)	2010	25,835	Belmont Housing Element
	2013	26,150	Belmont General Plan 2035
	2020	27,368	Belmont General Plan 2035
	2035	29,980	Belmont General Plan 2035
	2050	30,781	Belmont Housing Element
Commercial/Industrial (Jobs)	2010	8,180	Belmont Housing Element
	2013	8,610	Belmont General Plan 2035
	2020	9,450	Belmont General Plan 2035
	2035	11,270	Belmont General Plan 2035
	2050	11,339	Belmont Housing Element
Transportation (VMT)*	2005	194,095,685	Belmont 2005 Community GHG Inventory
	2010	182,315,628	Belmont 2010 Community GHG Inventory
	2013	190,599,156	Belmont 2010 Community GHG Inventory
	2020	N/A	Average annual growth rate for San Mateo County used.

* If projected transportation VMT in 2020/2035 data are not available, these table will use a default annual growth rate of 1.0440% for transportation. The data source for this annual growth rate is the Metropolitan Transportation Commission, December 2008. [Transportation 2035 Plan for the San Francisco Bay Area: Travel Forecasts Data Summary](#). This growth rate is specific to the travel forecast for San Mateo County. The source document is available online here:

http://www.mtc.ca.gov/planning/2035_plan/Supplementary/T2035-Travel_Forecast_Data_Summary.pdf

Table 16: Historic Emissions, Business-as-usual Emissions Projections by Sector and Emissions Reduction Targets

Year	Population	Business-as-usual (GHG MTCO ₂)	Reduction Target (15% below 2005 by 2020, 50% below 2006 by 2035)	Target below 1990	Target below 2005	Business as Usual w/ State Reductions Factored In
Estimated 1990 Levels:		142,501				
2005	25,477	167,648	167,648			167,648
2013	26,150	159,051	157,111			157,111
2020	27,368	172,577	142,501	0%	15%	128,153
2035	29,980	199,295	83,824	41%	50%	103,036